Colorado Medicine

The Official Organ of the Colorado State Medical Society

PUBLISHED MONTHLY BY THE SOCIETY

OFFICERS FOR 1904-05.

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VOL. I, NO. 14 DECEMBER, 1904. $2 PER YEAR

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COLORADO MEDICINE

PUBLISHED BY THE COLORADO STATE MEDICAL SOCIETY

VOL. I DENVER, DECEMBER, 1904. NO. 14

LEADING ARTICLE

THE COUNTY MEDICAL SOCIETY.

The letter from the Secretary of one of our county medical societies, published in the last issue of COLORADO MEDICINE (page 405) raises the question: How can each county medical society be made a success? It must be understood that the success of a county society will not be measured by the number of new discoveries promulgated through it to the medical world. Its success will be achieved by the bringing together of its members; the development of a feeling of mutual friendliness and confidence among them; by stimulating their interest in the general progress of medicine and the welfare of the medical profession; by making them more alert and careful in the observation of their cases, and by increasing and rendering more promptly available their resources for combatting disease.

The size of the society will have very little to do with its success: except that one criterion must be the proportion of practitioners residing in its territory, that are brought in to feel its influence. Methods that work well in a large society may be impracticable in a small one. But on the other hand the small society can do things that are quite out of the question for the large one. The danger is that the small society may try to imitate the large one, instead of developing the resources that it might readily command. The superiority of the small medical society for instructive and interesting scientific discussion has been pointed out before (see page 110).

In attempting to attain success in the county society, as in any other kind of associated effort, certain elementary principles must be recognized and conformed to. There must be regularity and punctuality to render successful any gathering of individuals. There is no more serious handicap to such an undertaking than the fear that unless a certain number attend nothing will be done, and the time will be wasted. That society is certain of success whose members are fully determined that when the time for meeting has arrived, and two or three have gathered together, the work of the meeting shall begin, with such business or discussion as can best be carried forward by those present. The order of the business for the meeting should begin with such things as can be best carried out by a few members.

The reading and adoption of minutes or other routine business may be disposed of at this time. But the scientific program should be arranged so that it can go on, however few may be present. The examination of cases and specimens can always be better done by a few than by many. So this may be given the first place. The examination of cases may be made a most interesting part of the meeting, and when taken up promptly at the beginning it will encourage punctuality. Of course when one shows a case he would like it to receive attention from all his fellow members. But something must be sacrificed to the general welfare of the society; and the examination a case can receive from a crowd is necessarily less thorough than will be given it by a few. The feeling that others are waiting to see a case is likely to interfere with its careful exami-

nation. If the member presenting the case especially wishes the opinion of some particular fellow-member let him communicate with that fellow-member beforehand.

A regular meeting time should never be allowed to go by without an effort on the part of those who attend, no matter how few they may be, to make the best use of the opportunity afforded by their coming together. This is the more important for the smaller societies, the members of which are brought together only with considerable difficulty. Matters should be so arranged that it would be impossible for the accidental absence of one or two members, who were to prepare papers or open a discussion, to render the meeting a failure. A prearranged and carefully prepared program is an excellent thing sometimes. But it should not be allowed to monopolize the regular meetings. In a small medical society it should never be the sole dependence.

The most uniformly and generally interesting meetings that the writer has ever attended, are those of the Denver Clinical and Pathological Society. Other things contribute to the exceptional success of this society; but its order of business is a most important factor. For its meetings no topic is ever selected beforehand for discussion; no written paper is allowed to be read. Its first order of scientific business is the presentation of patients. Next the presentation of specimens and new instruments. Then the program is completed by the roll-call, in response to which each member may briefly report cases, his report being then open to general discussion. The wealth of material brought before the society is indicated by the reports published each month in Colorado Medicine. But only a complete stenographic report could give an adequate idea of the interest and value of these meetings.

It would probably not be wise for a county society to confine itself exclusively to this kind of a program. But every county society should make provision for these spontaneous communications. Where this is done, the members come to to the meeting not knowing what will be brought up, but knowing from past experience that there will be something worth coming for.

At many meetings of the Denver society members go away without reporting cases as interesting as those which are reported, because of lack of time. Any group of three or four physicians in active practice, meeting once a month, and thinking over their more interesting and important cases in the way that they would for such a report of them, can make their gatherings extremely interesting and profitable.

The social gathering together of physicians is a most important function of the county medical society. Where the members are scattered over a large territory, and their meetings infrequent, the principal obstacle to free and profitable scientific discussions will be found in their lack of knowledge of each other. To those we know well, expression is always easier. The great discussions of our national gatherings would be in every way less valuable, if those taking part in them had not previously become acquainted with each other's views and personal peculiarities, through former meetings, or familiarity with their writings. The meetings of special societies, where the members year after year spend days living in the same hotel, or going together on excursions, ostensibly for pleasure, furnish ideal conditions for getting acquainted. The scientific development of the Sections of the American Medical Association, has been greatly augmented by the Section dinners, which are now giving place to gatherings that favor still more intimate personal contact.

How this social element is to be brought

into the life of the county medical society is a matter for special consideration in each individual case. When the society meets at the house of one of its members, and that member can entertain his fellow members at dinner, such an arrangement serves the purpose admirably. Often this plan is not practicable, or at least cannot be regularly depended upon. When this is the case the members can dine together at some hotel, which will furnish a parlor for their meeting; or light refreshments may be served in the meeting room at the close of the meeting. Where nothing better can be arranged an annual banquet, or other social gathering, should be held. But the best results are achieved when some social feature attends every regular meeting of the society. In whatever way it is done it needs to be recognized that the cultivation of friendship and sociability is essential even to the best scientific success of a county medical society.

These few suggestions are offered with full knowledge that there are other important matters equally worthy of discussion in this connection. It is hoped that other members will take them up from time to time, and present their views through the columns of COLORADO MEDICINE.

In the larger societies it is sometimes difficult to change the established routine and introduce even the most valuable changes. But in any of the smaller county societies it will be quite possible for the officers, or for any one or two energetic members, to bring about improved methods that will secure successful meetings. The opportunity of benefitting ourselves and our professional colleagues in this way is open to every one of us. E. J.

NOTE AND COMMENT.

Denver Academy of Medicine.—After some three years of preliminary meetings and efforts at reorganization the Denver Academy of Medicine begins to be a real factor in the life of the Colorado profession. The meeting hall in the Academy of Medicine building, 1434 Glenarm st., has been completed and is now furnished for occupancy. It is supplied with most of the American Medical Journals and a few of the more important foreign journals. The recent books received by COLORADO MEDICINE will be found there and a portion of those belonging to the Colorado Medical Library Association, including the libraries left to it by Drs. McClelland, Eskridge, Parkhill and Munn.

The Denver County Medical Society will hereafter meet in the Academy of Medicine Hall, which it has taken for every Tuesday evening in the year. When no meeting of the county society is held the hall will be open to the members as a reading room; or it will be available for lectures, conferences or other gatherings that may be planned. In brief, the Denver County Society will have a headquarters or home, which will exert an important influence upon its future development.

Inquiries About Colorado.—Probably all residents of Colorado who have any considerable acquaintance in other sections of the country receive inquiries regarding this region. But the Secretary of the State Board of Medical Examiners is especially exposed to them. Defending himself against damage suits for attempting to enforce the state registration law against osteopaths is only an occasional or incidental duty. His regular work, for which he receives his salary of no dollars and no cents, includes the answering of inquiries like the following. This letter was received after an extended interview with its author, an M. D. living east of the Mississippi, a short time previously:

My Dear Doctor:

If you remember I met you at St. Louis at the American Inn. * ** *

Is the influx of consumptives very great in your city now?

What is your tax rate?

Can a person get good goard at from $5 to $7 per week?

If I wished to deposit some funds in one of your banks soon, what bank would be a good one, and be convenient to a desirable portion of city?

Do they keep streets well sprinkled so that you do not have much dust blowing about?

What is your schedule of fees?

I will appreciate an early reply.

Yours sincerely,

— — ————————

P. S. If you think there will likely be a change in medical laws in regard to registration; that is, requiring every one to take an examination before he can become a practitioner, please let me know and I will appreciate it. I could make arrangements to come early in January if absolutely necessary. I would rather put it off some later.

In the medical schools there do they have X-ray treatment of disease taught? I have taken some lessons in this line, but would prefer more.

As I said before, any favors you can extend to me I will greatly appreciate. About what is office rent in good part of the city. Most Fraternally, — — —

———————

A. M. A. BLUE BOOK.

Readers of Colorado Medicine:

Permit me to again call attention to the fact that the A. M. A. is going to issue a "Blue Book" next April, and that I am asked to make out the Colorado list in January. This book will contain only the names of doctors who are members of county societies. If you are delinquent, or have never joined your local society, your name will not appear in this book. If you know of any good man who ought to be a member of your local society, speak to him and have him join immediately and then have your local secretary notify me. Every good man's name should be found in the A. M. A. Blue Book.. Respectfully Yours,

J. M. BLAINE, Secretary.

ORIGINAL PAPERS

TYMPANITES, ERUCTATION, MERYCISM AND AEROPHAGIA.

By C. D. Spivak, M. D., Denver.

The title of this paper follows consecutively the order in which these affections were studied scientifically. All of these phenomena are as old as man himself, and they were known to the ancients under various names and described as curiosities. It was only during the latter part of the nineteenth century that clinicians commenced to study these abnormal physiological manifestations.

I have grouped these four affections together because they all have in common one and the same causative factor, namely, air or gas.

1. *Tympanites*, with its synonyms in motion and is escaping; Pneumatosis denotes an accumulation of gas in the stomach or intestines in quantities sufficient to cause a disagreeable sensation to the patient and to give a tympanitic note when the abdomen is percussed. Although these terms are interchangeable, they are used to denote the following conditions respectively: Tympanites, when the gas is stationary and is retained in the viscera: Flatulency, when the gas is in motion and is escaping; Pneumatosis denotes an excessive accumulation of gas in the gastro-intestinal canal immediately after meals.

2. *Eructation* denotes frequent expulsion of gas from the stomach, vulgarly known as belching.

3. *Merycism* implies the regurgitation of food, its remastication, and subsequent reswallowing.

4. *Acrophagia* denotes the swallowing of atmospheric air which, in the majority of cases, is subsequently eructated.

Normally, all hollow organs contain a quantity of atmospheric air; the mouth, the stomach and the intestines contain at-

mospheric air, either pure or mixed with some other gases. We know that the escape of a certain quantity of air from either of the orifices guarded by sphincter muscles is not only compatible with good health, but is absolutely essential to well being. Occasional puffs, buccal or rectal, audible or not, are physiologic phenomena agreeable as a rule, but tabooed by polite society. Tastes differ. In China, for instance, it is quite different. Not only is belching not considered inelegant, but on the contrary, it is raised to the level of an institution, a national ceremonial. Instead of making after dinner speeches and telling stercoraceous stories, after the viands are discussed and the traditional rice is reverently ingested, the host rises and excuses himself before the invited guests for having invited them to so shamefully meagre a repast, being dead sure that their hunger was not appeased, nor their thirst quenched. The guests protest vehemently; they vie with each other in praising the variety and delicacy of the many dishes. The host stubbornly refuses to be convinced, turns a deaf ear to all their assertions, continuing dejectedly his lamentations. The guests, after having exhausted their flowery Oriental vocabulary, place their hands upon their bellies, approach the host and belch up into his face, loudly and repeatedly, thus bringing forth from the bottom of their stomachs conclusive and convincing proof that they are indeed fully satisfied.

The question as to whence the gas comes into the gastro-intestinal tract has occupied the minds of physicians from time immemorial. Most fanciful theories have been propounded. In another article on Aerophagia I have treated the subject from its historical standpoint at length. I will mention here only a few theories. Intestinal respiration is one, whatever that may mean. An exchange between the gases of the blood and those of the contents of the stomach is another. Fermentation and putrefaction are as a matter of course known to produce gases in the gastro-intestinal tract under certain conditions. But the evolution of gases in an empty stomach, after major operations, immediately after taking food, etc., preclude the explanation on the grounds of either fermentation or putrefaction. A more rational explanation must be sought for. Dejardin and Magendie, in the beginning of the last century, reported their observations of cases of air swallowing in man, and from time to time similar observations have been made by others. Bouvert, however, deserves credit for having made this subject a special study, and also for having given it the name—aerophagia.

The phenomenon of air swallowing is not limited to man alone. In fact it was first observed in the horse. Mr. A. M. Farmington, acting chief of the Bureau of Animal Industry, U. S. Department of Agriculture, in reply to our inquiry writes as follows: "The modes by which the horse accomplishes the act of air swallowing are known by the names of "cribbing" or "air sucking." Usually in cribbing, the horse takes a point of support or contact for his upper incisor teeth. Less frequently, he cribs in the air without taking a point of support, and is what is called a "wind sucker." To crib in the air, the animal begins a rapid up and down movement of the lips, then suddenly he lowers his head—sometimes to the level of his knees, and swallows a mouthful of air, most frequently with the production of a gutteral sound. * * * Remedies consist in the removal of objects that may serve as a base of support, and the buckling of a strap around the neck. * * * Surgical operations have failed to yield permanent satisfactory results.

The mechanism of air swallowing in man is of three kinds: (a) true swallowing, (b) aspiration or suction, and (c)

gulping. In true swallowing a wave of contraction sets in from the dorsum of the tongue and proceeds backward to the fauces of the esophagus, the larynx being at the proper moment pulled forward and upwards, and closed against the entrance of food by its protecting valve. Before this wave of contraction the food or air bolus is driven into the esophagus. Gulping of air is accomplished by the following process: The tongue is placed in the same position as for the pronunciation of the letter T, so as to prevent the escape of air either forward or laterally. Behind this margin of contact, the cavity within the mouth and pharynx is then filled with air from the larynx; and this air is at the same time imprisoned in the cavity, owing to the elevation of the soft palate, which shuts off communication with the nares, and the firm coaptation of the vocal cords, which shuts off communication with the trachea. Thus imprisoned on every side, the air in the cavity is then, in the act of gulping, put under strong and sudden compression by the elevation of the larynx and the dorsum of the tongue. Under this strong compression, it forces a passage for itself into the cavity of the esophagus, entering the upper end of that tube with a noise not unlike that of a slight eructation. Aspiration or suction is explained in this wise: When the circular fibres of the stomach contract the stomach is emptied of its contents, and when the longitudinal fibres contract, the stomach at once expands, and its lumen is re-established. The stomach and the esophagus therefore act together as a Politzer bag; at each compression of the stomach the air rushes out, and at each relaxation, the air is aspirated. Another ingenious explanation is that when the chest is dilated, the glottis remaining closed, the intrathoracic cavity becomes, forcibly enlarged, and all the organs of the mediastinum find themselves in the midst of a negative pressure. Each reacts in its own way; the esophagus opens up and the external air rushes into its cavity. As soon as the thoracic aspiration ceases, the air enclosed in the esophageal cavity is driven into the stomach, through the feebly resisting cardiac orifice.

Now, from the study of the subjects of tympanites, eructation, merycism and air swallowing, both theoretically from the literature and practically from my own cases, I have come to the conclusion that in the majority of cases the four different affections take their origin in aerophagia, that is, that the air which causes these phenomena finds its entrance into the stomach and intestines by the buccal route. The arguments in support of my assertion are: All these affections are accompanied by tympanites; whenever there is tympanites there is expulsion of gas; and on close study one will find that wherever there is belching there will be more or less, conscious or unconscious, swallowing of air.

From the many cases that I have seen in my own practice, and from the cases reported to me by my colleagues since I read my paper on aerophagia before the Denver City and County Society, I have become convinced that cases of aerophagia are by no means as rare as they were thought to be a decade ago. If one keeps his eyes open he can see them almost daily, not only in the office or at the bedside, but at one's table, in the restaurants and in the streets. Why, we all know the gentleman, who after a large meal covers his mouth with the palm of his hand, draws his breath several times successively, and then emits gentle puffs. Don't be deceived into believing that he covers up the act of pandiculation, otherwise known as yawning; he simply aspirates some atmospheric air and then performs the Chinese ceremonial.

Permit me to cite a few illustrative cases.

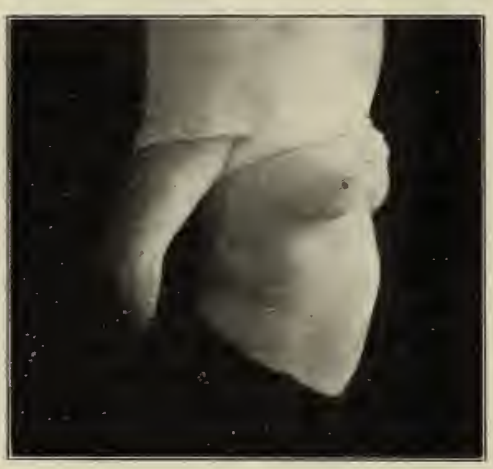
Case 1. V. T., 42 years old. Foreman construction works. Referred to me through kindness of Dr. C. B. Richmond. Had typhoid fever in 1887 and in 1903. Since second attack does not feel well. He commenced to suffer from palpitation, pain under the arch of the left ribs and a great deal of belching. I found him in bed complaining of pain in the right hypochondriac region, diarrhoea and belching. Pulse 70, weak. Respiration 20. Temperature normal. When he stood up, he shook and could not stand erect without being supported. Taking his pulse while in the erect posture, I found it bounding and counting 140 to the minute. The epigastric and hypochondriac regions were found greatly distended and highly tympanitic, the right side more so than the left. Liver dullness measured only one finger's breadth. On palpation no tumor was found, no fluid in the abdomen. He was very emaciated. The history of typhoid fever, the distended abdomen, the absence of fever, the loss of strength and the emaciation suggested chronic peritonitis. During the examination the patient belched loud, long and frequent, after which he said he felt relieved. I percussed the abdomen and found that the tympany was not so great as before, the distention had been somewhat reduced, and the liver dullness had increased. In watching the patient I noticed that he went through the act of swallowing several times, which can be recognized by the up and down movement of the larynx, which was followed by explosive eructations. On introducing the stomach tube, a great quantity of air escaped, the tympany and distention almost disappeared, and the liver dullness increased. The experiments were repeated daily at different hours with the same result. My diagnosis was: Neurasthenia, Tympanites and Aerophagia. Rather a long-winded diagnosis, to be sure. But it was right. The result proved it. For as soon as the patient gave up the swallowing of air he commenced to improve. He was not aware of the fact that he swallowed air constantly. It was a difficult matter to convince him that his belching was absolutely under his control. But at last he came out victor. In six weeks he left the hospital, well as far as the abdominal trouble was concerned.

Case 2. P. F. C. Tramway conductor, 30 years old. Referred to me through the kindness of Dr. Alfred Mann. Always had a delicate stomach. Typhoid fever 3 years ago, felt worse since. Food soured on the stomach, dead, heavy feeling after meals, was bloated, belched a great deal, and soon after meals belched up some food, which when it was not sour, and especially when he was on duty, he swallowed; otherwise he spat it out. Appetite was usually good, sometimes ravenous. He made attempts to belch, which gave him relief. On inquiry I found that he induced belching by expanding the chest and inspiring air.

Case 3. Mrs. L., 30 years old. Was well until she gave birth to her child. Commenced with constipation and then belching. She bloated after meals, and especially in the early hours of the morning. Passed a great deal of flatus, which relieved her. She had an idea that she suffered from uterine trouble. Dr. W. A. Jayne examined her and found the sexual organs in healthy condition. Although she practiced to a certain extent swallowing air, yet she was moderate, and I could not find out where the large quantities of gas she used to expel came from.

Case 4. Miss A., 24 years old. I was enabled to study this case through the kindness of Dr. Wetherill. She had always enjoyed good health until three

years ago, when she noticed that her abdomen became greatly distended after meals. Later she noticed a bulging in the region of the stomach, which became more and more prominent as time passed by. She was always hungry, eating six times a day, and could eat more. The quantity of the ingested food was larger than that of the average man. The bulging was accompanied with a sensation of heavy weight; after meals she smothered and had difficulty in breathing. She was



A Case of Chronic Pneumatosis.

very tired, head felt heavy. Belched a great deal, and also passed a great deal of flatus, both of which afforded her a great deal of relief. Her condition became aggravated after her menstruation. She suffered from constipation, and had to "take a little of everything" to relieve herself. No vomiting, no nausea. She was quite pale, but not emaciated. The anterior wall of the abdomen was covered with a thick layer of adipose tissue, especially over the epigastric region, which stood out most prominently. Palpation revealed no tumor, percussion gave a tympanitic note all over the abdomen, with liver dullness diminished. After having washed her stomach the bulging disappeared and the abdomen became retracted,—scaphoid. Examination of the stomach contents: nothing abnormal. Insufflation of the stomach brought that viscus into view, but displaced towards the right of the median line. She denied the habit of swallowing air, neither have I noticed it during my visits. Unfortunately I have not had enough time for careful observation. I suspect that she has swallowed air unconsciously, which is the rule. The case, it seems to me, is unique, and although it does not bear distinctly upon the subject of my thesis, I thought it pardonable to mention it.

Dr. Wetherill was kind enough to take the photograph of the patient, in which he succeeded remarkably. (See illustration.)

Case 5. P. P. S. Seen by the kindness of Dr. I. B. Perkins. Male. Served in the Cuban army. Suffered there from dysentery, and since that time has suffered from peculiar sensation in the chest, smothering attack and a great deal of belching. Dr. Perkins recognized that he swallowed air and then belched it up and induced the patient to wean himself from this vice. I have seen the patient lately and found that when he is not on his guard he still continues to swallow air.

In connection with this case I think it is not out of place to refer to the ingenious theory propounded by one of our members. In studying the subject of secondary phenomena of peritoneal infections, like adhesions, tympanitis and aperistalsis, Dr. H. G. Wetherill arrived at the conclusion that they all play a beneficient part during the acute stage. He draws the analogy from exudations and adhesions, which are conceded to play an important part in protecting the patient from diffusion of infection, as exemplified in a walled-off appendix or tubo-ovarian abscess. He is convinced that "tympanites, through ballooning the intestines and increasing intra-abdominal pressure, serves the same beneficient purpose," in bringing

loop to loop closely about the infecting focus and splinting the abdominal wall and diaphragm so that even the respiratory movement shall not disturb the newly established quarantine station."

The theory of Dr. Wetherill seems to be so sane, rational and ingenious, that there is no doubt it will be accepted by physicians and surgeons, the world over, and the mistreatment of tympanites following acute abdominal infections will be modified in accordance with this rational theory.

In conclusion I wish to say that as an epigraph to my thesis, and as a mnemonic device for you, I can use the text from Hosea, Ch. 8, verse 7. "They have sown the wind, they shall reap the whirlwind."

THE EFFECT UPON EDEMA OF ELATERIUM IN NON-PURGATIVE DOSES.

By Henry Sewall, Ph. D., M. D.,
Denver.

While the clinician is, from the very nature of his material, for the most part debarred from the field of scientific experiment, nevertheless the facts developed in bedside study may often suggest a line of research to the laboratory worker. The few observations upon which the following paper is based will have a scientific value, if at all, in some future experimental demonstration of the hypothesis suggested by them.

Nothing is more curious in the history of that ancient and interesting drug elaterium than the paucity of published clinical, not to say experimental, studies on its mode of action.

Drugs which produce watery catharsis have taken on new interest in the light of recent research upon osmosis and the physiology of lymph formation. A reference to the recent Harrington lectures on edema by Meltzer[1] will put any student at once in a position to weigh all current views of the subject from a critical standpoint.

It is ordinarily assumed, I think, that a cathartic drug given by the mouth produces its effect through direct action upon the mucous membrane of the bowel. Brunton[2], in his review of the pharmacology of catharsis, appears to support this view.

Cushney states[3], "The action of the purgatives is generally considered purely local, and strictly analogous to that of the skin-irritants." Then, after considering certain exceptions, "Few of the purgatives have any appreciable action after absorption, but general effects may be produced indirectly from their intestinal action."

As long ago as 1857 Claude Bernard demonstrated that subcutaneous or intravenous injections of solution of sodium sulphate caused purgation[4]. And lately J. B. MacCallum[5], after renewed investigation of the physiological action of saline cathartics, finds "that all those salts which act as purgatives when introduced into the stomach or intestine, have the same action when injected subcutaneously or intravenously." MacCallum found that, in rabbits, increased peristalsis could be caused by intravenous injection of salines within one minute which, were the salt thrown directly into the intestine, would only occur after ten to fifteen minutes, and with a dose five times the amount to produce an equal effect. "This seems to indicate," says MacCallum, "that even when these salts are introduced into the intestine, they must be absorbed into the blood before they can produce their purgative effect, and that they affect the intestine by increasing the irritability of the nerves and muscles, as Loeb has suggested."

The problem of the pharmacology of

cathartic drugs seems to fall naturally into two groups. First, what are the mechanisms involved? Second, what are their modes of action? The first question chiefly concerns us in this paper, and I venture to indicate the following obvious possibilities: 1. Cathartics, without being absorbed, may act only locally upon the surface of the intestinal epithelium, and the effects produced may or may not involve reflex actions of the nervous system. (According to H. C. Wood[6], "previous section of the par vagum prevents the action of purgatives.") 2. Cathartics may exert their specific irritation only or chiefly during their passage through the intestinal wall (a) during absorption, or (b) during excretion and, in either case, by direct contact with appropriate tissues or reflexly through the nervous system. 3. Cathartics may act only after absorption into the general circulation and on tissues other than those in the intestinal wall, especially, probably, the systemic capillaries.

Of quite another character appear to be the questions involving the mode of action of cathartics, whether, e. g., induced diarrhoea is due to increased secretion into the intestine, or only to retarded absorption and more vigorous peristalsis. Or the much deeper questions involved in the discrimination of the parts played, respectively, by osmosis and vital secretion (to beg a question) in catharsis.

It is probably the prevailing opinion that so-called "hydragogue" cathartics produce their watery flux solely through direct action upon the intestinal wall and that the drying of the tissues and the absorption of dropsical effusions is a secondary and passive result in the systemic capillaries of increased density or dryness of the blood occasioned in the intestinal circulation. But it is open to conjecture that cathartic action *begins* with accelerated absorption in the systemic capillaries, leading to increased blood pressure and lowered specific gravity of the blood and that increased diuresis and intestinal flux and peristalsis are later links in the chain of circumstances. Indeed, my own clinical observations upon elaterium seem most readily explained by an hypothesis founded upon such a course of events. The hypothesis may be stated in advance as follows: *Elaterium has the power of causing the absorption of dropsical effusions irrespective of the loss of watery fluid from the blood to the bowel.*

The proof of this statement is made more difficult but its soundness is by no means impaired by the common experience that the pharmacologic measure which relieves dropsies usually causes diarrhoea as well; nor is it here disputed that edematous fluid usually finds its principal avenue of escape from the body in the intestine.

It is unfortunate that my observations were made with the use of Clutterbuck's elaterium rather than with elaterin, the active principle of the drug.

The dosage employed varied according as the object sought was purgation or absorption of effusions without disturbance of the bowels.

In the first case results were obtained by the method advised by the elder Flint[7]. About one-tenth grain of elaterium was given by the mouth every hour until nausea supervened or the bowels began to move. The number of doses effective on this basis varied between three and eight. In the second case the drug was administered frequently for several weeks continuously in doses of one-sixteenth to one-eighth grain, given from one to three times daily. It usually happened that after a longer or shorter time nausea was produced. Upon this event the drug was at once stopped or sufficiently reduced in amount to relieve the nausea. I never saw anything approaching prostra-

tion produced by the drug. These observations were mostly carried on at the Arapahoe, now the Denver, County Hospital of Denver.

My attention was first especially attracted to the properties of elaterium thirteen years ago, by reason of its happy action in the case of a man 69 years of age who suffered from great swelling of the legs, marked breathlessness and other symptoms chiefly dependent upon dilation and probable degeneration of the heart muscle. On two or three successive days a small amount, 3/32 grain, of elaterium was ordered to be given hourly, not to exceed six doses. No effect was thus produced upon the dropsy or general symptoms. The drug was then ordered to be given every hour until nausea was produced or the bowels began to move. Eight doses were thus given during the latter part of one day. The next morning all signs of effusion had disappeared from the patient's legs and his painful subjective symptoms were found to be completely relieved. The nurses in attendance certified that the patient's bowels had not moved more freely after the last series of elaterium doses than on previous days. The quantity of urine passed was, unfortunately, not recorded. This patient had formerly been treated with digitalis, cathartics and diuretics with alternate improvement and relapse. After the effective dosage of elaterium he kept well during the remaining month of his stay in the hospital, receiving, it is true, digitalis and iron which had, however, previously been of no great help. The striking feature of this case was the suddenness of the disappearance of a large dropsical accumulation under a dosage of elaterium but little greater than that which had been previously ineffective. It looks as if there had been a cumulative action of the drug for several days. As the bowels were reported not to have moved excessively during the disappearance of the effusion, it is probable that the fluid made its escape chiefly through the kidneys, as in the following case: A pale, slender girl about 12 years of age had long suffered from uncompensated mitral regurgitation, chiefly evidenced by extraordinary ascites and edema of the legs. Ordinary therapeutic measures were applied with varying but diminishing success. A dosage of elaterium representing 1/16 of a grain two or three times a day was given without apparent effect, for a period of several weeks. Suddenly the child developed moderate fever, she suffered difficulty in breathing and it seemed as if dissolution from heart strain were imminent. The clinical picture was suggestive of that presented by a patient succumbing to sudden loss of compensation accompanying a mitral stenosis. I had been quite familiar with the physical signs in this case, and now I found that with this attack there was a considerable increase in the area of heart dullness to the right of the sternum and the heart was labored and very vigorous in its action. There was no sign of pericardial effusion. Within a single night the dropsy nearly completely disappeared and in the morning the patient was, from her own standpoint, quite well again. The child's mother certified that diminution of the dropsy was accompanied by no unusual movements of the bowels but that the patient had passed an extraordinary amount of urine during the night.

The study of this case convinced me that through some agency there had been suddenly set up an extraordinary activity of the absorbing mechanisms through which, on the one hand, the lymph spaces had been drained and, on the other, the blood vessels had been surcharged with a watery fluid, causing the heart to stagger under an unwonted load which would no doubt have overwhelmed it had not

the increased blood pressure found a safety valve through the kidneys. The fever accompanying the clinical crisis may, possibly, have been due to sudden flooding of the circulation with toxines dissolved in the dropsical fluid. Similarly I have observed uraemic symptoms, as headache and nausea, make their appearance with the sudden absorption of an ascitic effusion in Bright's disease.

After an interval of many months, practically the same clinical history was repeated in this child, following the administration of elaterium for a period of several weeks. Though other drugs were given coincidently with elaterium, through a process of exclusion there can be little doubt that the extraordinary results were due to the latter agent.

I have notes on twenty cases treated with elaterium for edema of various origins. In all but the relatively vigorous patients the drug was given in doses of but 1/10 grain from one to three times a day, and it was discontinued with the advent of nausea.

After a few days of such treatment a tuberculous patient suddenly lost a scrotal effusion, and in another edema of the feet disappeared. Out of twenty recorded cases elaterium disagreed, i. e., produced nausea, or rarely griping, in about one-half. In most instances the diminution of dropsical accumulations under its influence was attended with purgation and such cases are not available in this discussion. It may be remarked parenthetically that the favorable results secured through the use of elaterium supported by appropriate other treatment were of strikingly durable character.

To sum up the evidence offered in this paper: 1. The facts here presented seem most easily explained by assuming that elaterium, aside from its action on the excretory functions of the bowels and kidneys, directly excited absorption of fluid from the tissue spaces. Whether this effect is brought about by sudden increase of osmotic pressure of the blood or through some specific stimulation of the capillary epithelia through which endosmosis is accelerated, is a question for definite investigation.

2. The action of elaterium seems to be "cumulative" over considerable intervals of time. One or two small doses daily may finally produce a physiological effect or give rise to intolerance.

3. The drug may appropriately be used in most cases of edema, barring those in which there is a tendency towards enteritis.

4. If it is attempted to obtain therapeutic results without inducing nausea or griping, as in the observations recorded above, elaterium will be found irregular and unreliable in its action. Possibly better results would follow the use of its active principle, elaterin.

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[1]Edema, by S. J. Meltzer, American Medicine, July 2, 1904, **et seq.**

[2]Pharmacology, Therapeutics and Materia Medica, 1888, p. 390.

[3]Cushney, Pharmacology and Therapeutics, 1901, p. 94.

[4]Quoted by MacCallum, **infra.**

[5]J. B. MacCallum on the action of saline purgatives in rabbits and the counter-action of their effect by calcium. University of California publications, July 10, 1904.

[6]H. C. Wood, Am. Jour. Med. Sci., 1870, Vol. LX, p. 75.

[7]Flint, Practice of Medicine, 1886, pp. 872-892, etc.

NARCOTIC DRUG ADDICTIONS: PATHOLOGY, TREATMENT, PROGNOSIS.

By Geo. E. Pettey, M. D., Memphis, Tenn.

It would hardly be profitable at this time to consider the history of the growth of the narcotic drug addictions. It is sufficient to say that with the advent of

the hypodermic syringe these addictions began a rapid increase, and that this increase seems to be going on now at a more rapid rate than at any time in the past. The fact that confronts us to-day is that many thousands of intelligent and formerly useful men and women are held in the clutches of these enslaving drugs by fetters that they cannot themselves break. The vital question is, what is the real condition into which these people have been brought? What can be done for their relief? How can this be done and with what prospects of success may we enter upon the undertaking?

Much confusion has existed in the mind of the profession as to the pathology of morphinism and the allied addictions, and many unfounded theories have been held. These false notions as to the pathology led to an impracticable and unsuccessful treatment, ending almost always in failure; and out of these repeated failures grew an unfavorable prognosis. I do not think a darker or less promising picture was ever drawn than confronts one who turns to the pages of medical literature for light and hope for the victims of narcotic drugs. Until very recently medical literature has depicted these unfortunate ones as being wilfully and hopelessly abandoned to a loathsome and degrading habit, from which they could hardly be extricated. The drug in the system was held to be the sum-total of the pathology, and its withdrawal an all sufficient treatment. No greater error has been made with reference to any disease.

In attempting to arrive at the pathology of any disease we should consider the influences to which the patient has been subjected and the effects of such influences as well as the condition present. In pursuing this course with reference to the use of morphine we find that by its effects the activities of the liver and intestinal glands are markedly diminished, the vermicular motion of the intestine is suspended, alvine dejections are arrested, and the excretion of urea is decreased. The continuation of the effects of this drug result in the retention of a large per cent. of the products of waste. The presence of this excrementitious matter in the system leads to the formation of ptomains and other ferments, digestion and assimilation are thereby much impaired and the victim soon becomes intensely self poisoned and, later, profoundly anemic. The nervous system under the constant influence of this toxic matter becomes unsteady and irritable, and in a short while the patient presents the picture of an aged, neurotic, anemic wreck. From a grosser anatomical standpoint no structural lesions result from the prolonged use of opiates but the microscope, as well as the physical condition, reveals unmistakable evidence of the most widespread functional derangements. The blood is thin and deficient in the oxygen carrying red corpuscles, the mucous surfaces are pale, in fact all the structures show signs of profound anemia. On physical examination the abdomen is found unduly full and indurated, the liver enlarged and the portal system engorged, tongue furred, breath foul, skin dry at times and at others excessively active but always swarthy and yellow, nervous reflexes either blunted or exaggerated, heart action variable, both depending upon the stage of narcotic impression. The muscles are flabby and relaxed, the memory is impaired, mind inactive and the entire bearing of the patient is one of dejection and hopelessness. To sum up, the condition present is one of intense autointoxication with profound anemia, attended by derangement of the nervous system and impaired mentality.

In the treatment of many diseases the removal of the cause producing such disease is all that is necessary to enable nature to promptly restore health, but in

other diseases the removal of the cause is not all that is required to effect a cure. The pathological conditions brought about by the long continued action of the cause still exist after the cause is removed, and nature unaided is not able to fully remove these and restore normal conditions. This is true of morphinism. Until recently the entire therapeutic effort in the treatment of morphinism was directed to the withdrawal of the drug. Great difficulty was experienced in accomplishing even this step, but it was firmly believed that if the drug could be successfully withdrawn that the patient would be cured. In some cases this was accomplished and then victory was proclaimed and the patient pronounced cured notwithstanding the fact that he still had to contend with most of the pathological conditions that had sprung from the prolonged use of the drug. He was still profoundly anemic, very much more so than at the beginning of the treatment, a sense of complete exhaustion oppressed him, his nervous system was greatly unbalanced, he could not sleep, had no appetite, suffered from diarrhoea, nausea, etc.; in fact his condition was not one of health in any particular, and since he was totally unable to successfully contend with all these complications a return to the use of the drug usually followed.

When we consider the extent and nature of the functional derangements that result from the use of opiates it is unreasonable to expect that the mere withdrawal of that drug would correct these derangements to such a degree as to constitute a cure of the addiction; yet a mere suspension of the use of the drug has been the height of the endeavor of not only the irregular institutions which have had a monopoly of this class of work, but also of members of the regular profession who have occasionally undertaken the treatment of these addictions. Nothing but failure could be expected from so low an aim.

Let us consider what does really constitute a cure of a drug addiction, what must be accomplished before a condition of health is reached, and how this can be done.

In a paper published in the *Therapeutic Gazette,* Oct., 1901, I gave in detail the essential steps to the treatment of the narcotic drug addictions so far as therapeutic measures are concerned and I shall not here repeat them, but will only say that since autotoxemia is the essential pathology of morphinism, to overcome that by thorough elimination of both the drug and the effete material with which the system of the patient is surcharged is the first and most important step. Then follows the complete withdrawal of the drug with the administration of hyoscine to control the active withdrawal symptoms and to relieve the suffering that would otherwise follow such withdrawal; and the administration of sparteine to support the heart if such support should be required. This can usually be accomplished within the first week of treatment and no medication is ordinarily required after that time, but the patient is not cured of his addiction simply because he is off of the drug and does not require further medication. Instead of being discharged at this stage as is ordinarily done he should be put on a course of physiological treatment projected upon sufficiently broad lines to restore his nervous system to its normal balance, overcome the anemia, regulate the functional action of every organ in his body, and thus effect a complete restoration to health. This course should consist of wholesome food, an abundance of out-door exercise, congenial company, protection from all temptation and a systematic course of physical training with such mental and moral discipline as the particular case may require.

Usually soon after the completion of the therapeutic measures above indicated the desire for food becomes active and the

powers of digestion and assimilation seem almost without limit. This leads to a rapid increase in flesh, amounting in many instances to a pound or more per day. While the general appearance of the patient is much improved by this rapid acquisition of flesh his strength and powers of resistance do not have a corresponding increase, in fact, the taking on of twenty to thirty pounds of new flesh during the first month after withdrawal of the drug, if left to itself, is an incumbrance instead of a resource. The patient becomes sluggish, tires easily on slight exertion and if allowed to do so falls into a state of general lassitude, and if left to himself would resort to stimulation to overcome what he describes as intolerable weakness. This is the point where many otherwise successful efforts in the treatment of these addictions fail. The exercise of a little reason and common sense is all that is necessary to avoid this. As soon as the active therapeutic measures are completed the patient should be put upon a course of physical training so planned as not only to develop and strengthen his flabby relaxed muscles, but also to convert every pound of the newly acquired flesh into stout, tense muscular fiber. This course should embrace systematic exercise for every set of muscles in the body and should be persisted in at prescribed hours and under a competent drill-master until the erstwhile anemic, nervous wreck has acquired such a degree of strength, has accumulated such a fund of reserve physical resources as to be able to stand the strain of his ordinary vocation without exhaustion and without feeling the need of stimulation. When this point has been reached, when physiological health has thus really been restored, then the patient is cured of his addiction, but not until then. When a patient of this class has been brought to this standard of health he may be discharged from treatment with the expectation that he will remain free from his addiction and in a majority of cases he will do so. The cure of these addictions is not a very difficult thing to accomplish. It is true, to handle them successfully one must be prepared to give them proper care and supervision, but when thus prepared all that is necessary is a fair knowledge of what is really to be accomplished and a conscientious and faithful application of the well known principles of medicine. Instead of the prognosis being unfavorable, a perfect cure should be the general rule.

DISCUSSION.

Dr. George F. Libby: Dr. Pettey's paper is a contribution of value to the treatment of these most discouraging cases of drug habit. While in general practice I treated a considerable number of cases of morphinomania in a military hospital, and was impressed with the fact that eternal vigilance and thorough discipline are valuable adjuncts of treatment. Having eliminated the drug from the system, cut off the supply (often a most difficult task) and built up the patient's health by good foods, fresh air and sunshine, and tonics, there remains the necessity of providing him with a motive for the agreeable use of mind and body. This, it seems to me, is admirably supplied by Dr. Pettey's system of physical exercises.

I want also to testify to the value of hyoscine in controlling the nervous irritability or maniacal excitement. Used hypodermically it is easy of administration and quickly effective. I have just recently seen its use strikingly beneficial in a child of five years suffering from shock followed by convulsions, after the use of nitrous oxide gas as the anesthetic for a tenotomy of the internal rectus. The spasms, which were increasingly severe, were relieved in ten minutes by 1-400 grain of hyoscine hypodermically, and did not return.

ETIOLOGICAL ASPECTS OF PUERPERAL FEVER.

By Charles B. Dyde, M. D., Greeley.

In presenting some aspects of puerperal fever for your consideration I shall briefly review its early history, its develop-

ment and the theories of its origin, touching briefly upon the struggle through which it passed in the middle decades of the last century, before it emerged and was accepted as a contagious disease. And showing how, by the growth of modern bacteriology, its infectious nature has been placed on a sure and indisputable base.

That we may not be called upon to meet this ailment is our common prayer, and to this end our efforts should be intelligently directed towards the maintenance of its prophylactic care. After closing with some of the present ideas on this part of the treatment, some of you may add a few remarks concerning the measures to be instituted when the active disease has to be faced.

While theories as to its origin have been many, the name puerperal fever, introduced by Strothers, remains. Amid controversy and through changing opinion, it advocated no particular theory and so was accepted by all. As we might expect, Hippocrates, our common father, did not overlook this malady. He stated that it was due to a suppression of the lochia. This view was maintained by many writers for upwards of two thousand years, and among its advocates we find Galen, A. D. 200, Avicenna, 1000; Sydenham, 1682; and Tissot, 1795.

A theory of more recent date, that of milk metastasis, was promulgated by Willis in the year 1662 and advocated especially by Puzos. He held that the milk, being turned from its normal channel, located elsewhere. The fibrinous peritoneal exudate was an excursion of milk to the abdomen; phlegmasia alba dolens was milk in the leg; if high fever and delirium were present milk had gone to the head; if arthritis existed there was milk in the joints.

At the beginning of the nineteenth century, Autenreith advanced his physiological theory, being a combination of those already mentioned. His view was that during pregnancy excretions flow especially towards the uterus. After labor these are eliminated by the sweat, milk and lochia. When their course is interfered with they flow towards the head, thorax and especially towards the abdomen.

The inflammatory theory was introduced by Plater in the year 1600 and laid dormant for nearly two hundred years until, in 1789, Alex. Gordon of Aberdeen, became prominent. Having lost seventeen consecutive cases of puerperal fever he obtained permission for a post mortem examination of the body of Elizabeth Allen, his lost patient. He found peritoneum, omentum, mesentery and meso-colon in a state of inflammation; the omentum partly disintegrated; the colon highly inflamed, with beginning gangrene; the uterus inflamed, soft and friable; and two pints of free pus in the abdominal cavity.

The same line of research was pursued in other quarters resulting in the inflammatory or phlogistic theory of the disease. Based on these findings the antiphlogistic treatment of Gordon was received with loud acclaim and heralded as a specific remedy. "The method I have pursued and proved most successful," says Gordon, "is copious bleeding soon after the attack begins. When I take ten or twelve ounces the patient always dies and when I have the courage to take twenty or twenty-four ounces my patient never fails to recover." The inflammatory theory and treatment, with but few modifications, prevailed during the earlier half of the nineteenth century. The close of this period marks the advent of a school of thought not satisfied with existing affairs.

The great mortality attending the frequent epidemics of puerperal fever was viewed with consternation and alarm. The result was a closer examination into

the habits and phenomena of the disease, which culminated in the declaration that puerperal fever was a contagious and transmissible disease. Among these early investigators we find Semmelweiss of Vienna, Churchill of Dublin, and in this country Oliver Wendell Holmes of Boston. Semmlweiss is acknowledged to be the leader of continental thought on this subject. Lessons long hidden appealed to him with singular force and their significance was revealed.

He observed that the great epidemics of puerperal fever during the past century were most severe in hospitals, to a less extent among the poorer classes, the well to do being most free. That in hospitals, the mortality in that part of the maternity reserved for physicians was much greater than in the section attended solely by the mid-wives. That cases were most frequent in strong healthy primiparae, with protracted first stage. And that women who happened in labor on their way to the hospital seldom developed it, notwithstanding injury and exposure. He was thus led in 1847 to introduce as a prophylactic measure the use of chlorine water, to disinfect the hands of physicians, and within two years had the pleasure and satisfaction of seeing the mortality decline from 11 to 1¼ per cent.

Among those early converted to the doctrine of Semmelweiss was Michaelis, professor of obstetrics at Kiel, who became a martyr to his faith. Being called to attend a near relative in labor, she unfortunately developed puerperal fever and came to an untimely end. Satisfied that he was personally responsible, he threw himself before a moving train.

A little later Churchill of Dublin, having witnessed a severe epidemic at that place, began to collect evidence favoring a contagious origin, and in support of this relates the ominous experience of Campbell, an Edinborough physician who attended a post mortem examination of a puerperal case and carried away the pelvic viscera in his pocket. That evening he attended a forceps case at Bridewell, the next morning delivered a woman at Cannongate. Both perished, as well as two others whom he attended the following day.

Churchill also mentions that a close relation exists between erysipelas and puerperal fever. "Both occurred during the cold, damp months. An epidemic of erysipelas was usually followed by an epidemic of puerperal fever, and a doctor attending one had frequent cases of the other." His conclusions were that it was an infectious and contagious disease, communicable from patient to patient in close contact and near neighborhood and the indications were that it could be carried by a third party.

Holmes was the apostle of the contagious doctrine in this country, and in the face of bitter opposition, published papers in 1843 and 1855 to uphold his contention. The rules he then suggested are still applicable. "A physician holding himself in readiness to attend cases of midwifery should never take any active part in post mortem examinations on cases of puerperal fever. If present at such, he should use thorough ablution, change all clothes and allow twenty-four hours to intervene. Similar precautions should be taken after autopsy on, or surgical treatment of, cases of erysipelas, if obliged to unite such offices with obstetrical duties, which is in the highest degree inexpedient."

Such was the tenor of the progressive thought uttered by the prophets and seers of the nineteenth century, and while the omens were good and the auspices favorable, there were leaders in Israel who received not with favor these new doctrines.

Meigs, of Philadelphia, a very arbitrary authority, thoroughly dissented from the

view that the disease was contagious and although aware, as he states, of the evidence in favor of such contention, preferred to attribute these cases to chance or to the dispensation of divine providence. "I repeat," he says, "that if the epidemic cause of child bed fever cannot effect any other women than women lying in or pregnant, it must be a feeble cause, else it would produce disease in unmarried women, girls and males." Prof. Fordyce Barker, a distinguished authority whom some of you may have known, held the view "that there was a fever peculiar to puerperal women as distinct as typhoid or typhus; that it was due to some unknown blood changes, of the cause of which we are ignorant. As the determining cause there is some epidemic influence, infection or nosocomial malaria." This adverse influence, however, did not delay investigation and research. Progress and development have continued and our light has increased even until the present day.

We have surely a reasonable pride that the medical profession has so worthily labored, so wonderfully achieved. The dread of this cruel scourge, from a hand unseen, no longer makes anxious the expectant mother. We have emerged from the medieval power of the evil eye, passed through the dark chamber of superstition and chance, past the gloomy despair of baneful miasma and epidemic influence. Led by the torch of investigation and the lamp of scientific truth, we have now a faith born of reason and full of hope.

Puerperal fever at the present time, on a bacteriological basis, is clinically divided into sapremia and septicemia. Sapremia results from a condition in which the uterus has not been thoroughly cleared. Non-pathogenic bacteria, or saprophytes, an omnipresent form of vegetable organisms which thrive on dead animal or vegetable matter in the presence of oxygen, gain admission; and as they find the uterine debris a suitable nidus, begin their labors, resulting in decomposition and fermentation, with by-products of gas and ptomaines. The absorption of these causes the constitutional disturbance which we designate by the term sapremia. The positive characteristics of this condition are unsettled. At time of onset, chills and severe constitutional disturbance occur, with foul and altered lochia. Negatively we note the absence of the severe pain and tenderness of local inflammation. If not complicated by infection, removal of the uterine contents is followed by a rapid amelioration of the symptoms. This condition is serious in itself and serious in its possibilities. With a reduced vitality and weakened system, the defending cells and leucocytes are able to make an inefficient and passive resistance, if pyogenic bacteria should be present and attack these enfeebled forces.

In septicemia we understand that the system has been infected—attacked by pathogenic organisms: parasites, which gaining admission, live and rapidly propogate, producing toxins in their life process. Their field, if resistance is active, may be limited and local. They may encroach and spread by contiguity, or through the blood and lymph channels, permeate the whole body.

Davis considers puerperal sepsis under nineteen heads, as vulvitis, vaginitis, metritis, etc., each subdivision corresponding to site of infection or seat of inflammation and extent which the disease spreads. Pathogenic bacteria may gain admission at any point where the continuity of the parturient canal is severed. Infections in the lower portion of the canal are regarded as likely to be limited in area and extend slowly. While if we consider the anatomical structure of the uterus at this time, the receptive placental site, its great vascularity and close relation to the general peritoneal cavity, it is not surprising

COLORADO MEDICINE

A Medical Journal

CONTAINING THE PROCEEDINGS OF THE COLORADO STATE MEDICAL SOCIETY AND ITS CONSTITUENT SOCIETIES, WITH PAPERS READ BEFORE THEM AND OTHER RELATED MATTER

EDITED BY

EDWARD JACKSON, M. D.

Volume I

November, 1903, to December, 1904

PUBLISHED UNDER THE SUPERVISION OF THE COMMITTEE ON PUBLICATION OF THE COLORADO STATE MEDICAL SOCIETY

DENVER
PRESS OF THE REED PUBLISHING COMPANY
1904

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that infections there are more frequent and of a more serious character. The severity of an attack is determined by the seat of infection, resistance presented and the character of the invading organism. The organism regarded with most dread is the streptococcus pyogenes, the chain coccus of pus, the infective agent in erysipelas and the angina of scarlet fever. It is generally found in fatal cases, recovered in the lochia, organs and blood.

Widal and Sternberg in a series of fatal cases never failed to find it present. The habits, original and acquired, of this organism as expounded by reliable observers present considerable irregularity, and the general practitioner is somewhat confused by the various bacteriological findings. It is apparent that the streptococcus possess a changeable virulenance, while morpholically identical, they may widely vary in their animosity to the human race. they may be found blandly bathing[2] in the vaginal secretions of the pregnant woman, leading an idle existence in the normal acid mucous of the vagina, they have lost their rapacity.

Nature has not in vain set up this barrier so hostile to parasitic germs. The attenuation of their pathogenic power is due not only to the potency of the vaginal mucous but also to the continued idleness and inactivity[3] of the cocci themselves. Pyogenic organisms and the colon bacillus also find a convenient lodging in the folds of the vulva, around the perineum and anus. Unaided[4] the virulent capacity of the colon bacillus is open to question, and while pus cocci, present in this locality, may have become more or less attenuated, having lived for some time apart from a host, it should none the less be recognized that danger from this source is not impossible.

Who can tell these comparative innocent guests, and those of mild type, from the lean and hungry cocci which swarm in thin yellow pus, fresh from the peritoneal fold? That less virulent type of pus germ, the staphylococcus[4], the colon bacillus[4], the bacillus aerogenes capsulatus[4] and the gonococcus[4], have all been reported responsible for fatal cases. It is not surprising that the gonococcus is asked to bear on his willing shoulders responsibility for one-sixth of all infected cases. That it is not a more frequent cause is its one claim for respectability, its opportunity being great. A gonorrhoeal infection is marked by a late onset, slow pulse and moderate temperature, a profuse purulent lochia, with abundance of gonococci, its course being mild and chronic.

The theory that pyogenic organisms gradually lose their virulence when compelled to live an idle existence, a saprophytic life, has been mentioned. That the vagina of a healthy pregnant woman may contain pathogenic organisms is affirmed by some observers[5], others deny that they can exist there as such[6]. The practical conclusions are that nature has carefully provided for the contingency of accidental contamination by creating a resisting force which attacks and devitalizes the invaders. This force is the normal vaginal mucus, a sticky gelatinous substance, rendered acid by a bacillus discovered by and named after Doederlein. Its normal habitat is the vagina, the acidity of which it maintains by forming lactic acid. This is the first barrier erected by nature to guard against infection.

In the internal economy the leucocytes are a destroying angel, an active force against the infective process, a force whose power we recognize when we learn that patients in whose vital stream pyogenic cocci are found may yet pass safely on to recovery. That the leucocytes are an active bulwark of defense, we have for some time been taught by Metchinkoff, in his theory of phagocytosis; and we later learn, according to Ehrlich's side chain theory, that the leucocytes, under the stimulus of the infecting organisms, pro-

duce alexins or antitoxins, which attack and overcome the invaders, or possibly are overcome by them.

This theory has been practically applied to the production of an artificial immunity or resistance before abdominal operations, by Mikulicz, of Japan[7], with some success. His method of procedure is to produce a hyperleucocytosis by intraperitoneal or subcutaneous injections of nucleic acid. This stimulates the development of leucocytes. After twelve hours when the climax has been reached, he conducts the operation. He found that the peritoneum of guinea pigs, thus prepared, was much more resistant to intestinal contents than without such preparation, in addition to the success which attended his operative work. That this treatment will be applied to the prophylactic care of women in labor seems unlikely. That it may have a field of usefulness in developing the resistance of infected puerperal cases, is not impossible; as, according to Vaughn[8], we have no proof that anti-streptococcic serum has any therapeutic value, any virtue it may possess being due to it stimulating the development of leucocytes.

If we accept the generally recognized fact, that the vagina is normally sterile, the term auto-infection will be relegated to obscurity, or employed only by those who desire a "cloak for their ignorance and a salve for their conscience." In discussing the prophylactic treatment, that the attending physician bears the responsibility is a fact we are forced to recognize; responsible to his own conscience and if this be not sufficiently quickened he will have as an additional stimulus that of a laity, suspicious and well informed, who do not fear to cast the first stone.

While in former days the hospital was the theater of the great epidemics of puerperal fever, such is not now the case. The observance of a careful technique has removed the onus, and the disadvantage now rests with the general practitioner.

The prophylaxis may be considered under three heads, viz: the care exercised by the physician on his own person; the ante-partum preparation of the patient; and the post-partum care of the patient. The maxims of Holmes still hold good, the propriety of attending obstetric cases when caring for erysipelas or scarlet fever even with elaborate preparation, is very doubtful, the physician accepting a personal responsibility in so doing.

That our personal and surgical cleanliness are necessary we all understand, if our wish for personal cleanliness (meaning thereby clean appearance and clean linen) and our care to make our examining hand sterile, were equal to our knowledge regarding these necessities, we would not be weighed in the balance and found wanting. In this respect we should endeavor to live up to our knowledge and be clean in fact as well as in name.

That it is necessary for the general practitioner to come in contact with septic and pus cases, we all know and for those who doubt their ability to make their hands aseptic, rubber gloves are a useful addition. Rubber gloves, however, properly cared for, mean only clean hands and a certain amount of protection to the physician, not a specific, which renders other measures unnecessary.

The wisdom of the physician absenting himself after one thorough examination is readily apparent. In addition to personal reasons, frequent examinations, both useless and unwise, are thus avoided.

Bacteriology sheds considerable light on the value of the measures taken in the ante-partum preparation of the patient. That the physiological and useful vaginal mucus should not be disturbed by the antiseptic douche, is evident, thereby lessening resistance to infection, removing that which facilitates labor and making more possible vaginal abrasion. Not so a thorough emptying of the lower bowel by rectal enema, thereby removing an ob-

struction to labor; a cause of later unpleasantness to patient and physician, and a material dangerous in that it contains a multitude of colon bacilli. This should be followed by a thorough mechanical and antiseptic cleansing of the parts contiguous to the birth canal. The vulva, perineum and anus present a convenient harbor for colon bacilli and pyogenic cocci, and these may be easily carried into a sterile vagina on an aseptic hand or glove.

The care subsequent to delivery includes the immediate repair of injuries to the birth canal, eliminating as far as possible avenues for infection. While we are surely sufficiently alert to examine for perineal tears and disposed to remedy these injuries, I doubt if we display the same assiduity in our examination for vaginal and cervical tears, much less institute measures for their repair. The keenest obstetricians advise placing a stitch or two in even small tears of the fourchette. The usual mistake in repairing the ordinary rupture of the perineal body is the use of superficial skin sutures, not including the body of the perineum.

Theoretically speaking the same arguments exist in favor of a primary repair in complete lacerations, the accessibility of capable assistance, and the consent of your patient, to undergo such an ordeal at this time, are also factors for consideration in private practice.

Lapthorn Smith in a recent article[9] advocates the novel method of placing perineal sutures in position before laceration takes place. He uses two or more sutures through the body of the perineum, according to its rigidity (before the head comes down), leaving the untied ends held by hemostats. If there is no tear they are withdrawn. If a rupture occurs they are tied from above down, thus securing, he says, the most accurate coaptation.

The treatment of vaginal tears, if discovered, by running suture of catgut, is not difficult nor is it subject to objection. Over the management of cervical tears, however, there is still considerable controversy. Smith[9] and others meeting with success, while Baldy[10] considers their primary repair inexpedient.

Post-partum douches are under the ban as a routine method, being reserved for special indications. There is no reason for their use in normal cases cleanly conducted. The general practitioner, as a rule, has not adopted a special occlusion pad. When we observe the substitutes which are sometimes used, we can readily conclude that a little missionary work on behalf of this article, during our waiting time, would not be inopportune.

[1]Baum & Sigwart, Journal A. M. A., July 23, 1904.

[2]Sternberg, Bacteriology.

[3]Kelly, Operative Gynecology.

[4]Vineberg, Am. Journal of Obstetrics, Sept. 1903.

[5]Baum & Sigwart, Journal, July 23, 1904.

[6]Marx. Am. Journal of Obs., Sept., 1903.

[7]Med. Rec. Edit., July 16, 1904.

[8]Vaughan, Physician & Surgeon, May, 1904.

[9]Am. Medicine, July 30, 1904.

[10]Am. Medicine, Aug. 20, 1904.

MINUTES OF THE ANNUAL MEETING OF THE COLORADO STATE MEDICAL SOCIETY.

The Thirty-Fourth Annual Meeting of the Colorado State Medical Society was called to order at 10 o'clock by the President, Dr. T. H. Hawkins, at the Brown Palace Hotel, in Denver, Tuesday, October 4, 1904.

The Secretary, Dr. J. M. Blaine, announced that according to the constitution and by-laws every member must register and get a badge.

Papers.

The first paper was one by Dr. E. C. Hill, of Denver, on "The Laboratory Diagnosis of Gastric Diseases." Discussed by Dr. Van Zant.

The next paper was by Dr. B. F. Wooding, on "Typhoid Fever and Its Treatment."

Dr. Frank Finney, of La Junta, read a paper on "Bone Necrosis following Typhoid Fever." Discussed by Dr. J. G. Sheldon, of Telluride.

Dr. F. E. Waxham, of Denver, read a paper entitled "A Review of the Literature of Diabetes Mellitus in Children, with Report of a Case." Discussed by Dr. E. C. Hill, of Denver and Dr. Cattermole, of Boulder.

The next paper was by Dr. G. H. Cattermole, of Boulder, upon "Duodenal Ulcer Caused by Pressure from Gall Stones in the Gall Bladder." Discussed by Dr. Sheldon, of Telluride, Dr. Wetherill, of Denver, and Dr. Chrisman; Dr. Cattermole closing the discussion by reading certain portions of the paper which had been omitted.

The next paper was by Dr. C. D. Spivak, of Denver, upon "Tympanites, Merycism and Aerophagia."

There being no one else prepared to read a paper at this time, the meeting adjourned.

Tuesday, 2 o'clock p. m.

Papers.

Dr. M. Collins, of Denver, read a paper on "Sub-Normal Temperature in Tuberculosis," and presented a number of charts and records to the Society for examination..

Dr. Henry Sewall, of Denver, read a paper on "The Effect upon Edema of Elaterium in Non-Purgative Doses."

A paper on "Treatment of Some of the Pleuritic Complications of Pulmonary Tuberculosis," by Dr. S. G. Bonney, of Denver, was then read. Discussed by Dr. Whitney and Dr. Sewall. Dr. Bonney closed the discussion by reading the remainder of his paper.

A paper on "An Improved X-Ray Method for the Study of Bone Injuries," by Dr. G. H. Stover, was then read. Discussed by Dr. I. B. Perkins, of Denver, Dr. Stover closing.

Dr. Stover: I move that those papers not presented, be recorded as having been read by title. The motion carried. Adjourned.

Wednesday, October 5.

10 a. m.

The meeting was called to order by the President.

Papers.

The first paper, entitled "Is the Transplantation of the Spermatic Cord Necessary for the Radical Cure of Inguinal Hernia?," by Dr. F. Gregory Connell, of Salida, was read.

A paper on "The Narcotic Drug Addictions," by Dr. George E. Petty, of Memphis, Tenn., was then read. Discussed by Dr. George F. Libby, of Denver.

The next paper, "A Report of a Case of Pernicious Anemia," by Dr. O. M. Gilbert, of Boulder, was then read. Discussed by Dr. Arneill.

"The Operative Treatment of So-Called Medical Diseases," by Dr. J. G. Sheldon, of Telluride, was then read. Discussed by Dr. C. A. Powers, of Denver.

A paper on "Pleurisy with Effusion and Empyema from the Standpoint of the Internist," by Dr. James R. Arneill, of Denver, was read. The discussion on it was opened by Dr. Whitney, followed by Dr. Sewall and Dr. Dennison.

Adjourned.

2 p. m.

Meeting called to order by the President.

Dr. Eleanor Lawney made some remarks upon The State School for Deaf and Blind, introducing Mr. Argo, in charge of that institution at Colorado Springs, who addressed the Society and gave an exhibition of the results attained by the methods employed at the school, having some of the pupils present to demonstrate them.

Papers.

One on "Education vs. Legislation," by Dr. R. W. Corwin, of Pueblo, was then read.

The President said: We are all greatly indebted to Prof. Argo and Dr. Lawney, and now that we have had Dr. Corwin's paper, I will throw the entire subject open to discussion. Discussed by Dr. Melvin.

Dr. S. D. Van Meter, of Denver, said: I wish to say that I am perfectly in harmony with the ideas advanced by Dr. Corwin on the question of education, although I think he could have extended the idea to the legislators themselves (laughter and applause). He then read the report of the Committee on Public Policy and Legislation.

The next paper was by Dr. Corwin upon "Report of Cases, viz.: Treatment of Stump in Appendicitis, and Unique Case of Traumatic Hernia," by Dr. R. W. Corwin, of Pueblo..

A paper on "A Case of Infantile Scurvy," by Dr. H. B. Whitney, of Denver, was then read.

A paper upon "Etiological Aspects of Puerperal Fever," by Dr. Charles B. Dyde, of Greeley, was read by Dr. J. A. Miller, of Greeley.

"The Employment of the X-Ray in the Diagnosis of Bone and Joint Injuries," was the subject of a paper by Dr. S. B. Childs, of Denver. Discussed by Drs. Stover, Parker, Powers, Gibson, and Dr. Childs closing the discussion.

A paper on "When Not to Operate in Appen-

dicitis," by Dr. H. G. Wetherill, of Denver, was read. Discussed by Dr. Grant.

A paper entitled "Bone Formation—Extensive—In an Unpromising Case of Gun-Shot Injury Involving the Leg," by Dr. G. W. Miel, of Denver, was read.

Adjourned.

Thursday, October 6.

Morning Session.

Society called to order by Dr. T. H. Hawkins, President.

Papers.

"School Sanitation," by Dr. F. G. Byles, Denver. Discussed by Drs. Cattermole, Melvin. Van Meter, Jackson; discussion closed by Dr. Byles.

"Indications for Nephropexy," Dr. J. N. Hall, Denver.

"Colopexy of Sigmoid Flexure for Prolapse of the Rectum," Dr. A. L. Bennett, Denver.

"Clinical Experience with Prof. Dunbar's Pollantin in the Treatment of Hay Fever," by Dr. W. W. Bulette, Pueblo. Discussed by Drs. Melvin and Gildea.

"The Mastoid Operation, Report of Cases," by Dr. R. G. Davenport, Trinidad. Discussed by Dr. Boyd.

"Operated Cases of Converging Strabismus, Photographic Illustrations," by Dr. W. C. Bane, Denver.

"Final Report of Cases of Congenital Dislocation of the Hip, with Exhibition of Patients," Dr. G. B. Packard, Denver.

The "Report of Matters of Interest from Last Meeting of A. M. A.," by Dr. W. A. Jayne, Delegate, Denver, in the absence of Dr. Jayne, was read by Dr. J. M. Blaine, Secretary.

"The Management of Cataract," Dr. Melville Black, Denver. Discussed by Dr. Boyd.

"Sarcoma of the Back," Dr. Charles A. Powers, Denver. Discussed by Dr. Finney.

Afternoon Session.

Society called to order at 2 o'clock by Dr. Hawkins, the President.

Papers.

"The Early Diagnosis and Treatment of Appendicitis, with Personal Reports from One Hundred Physicians Who have Suffered from the Disease," Dr. I. B. Perkins, Denver. The discussion of this paper was postponed until after the reading of Dr. Grant's paper.

"Surgery of the Abdominal Cavity," Dr. W. W. Grant, Denver. The two last mentioned papers were discussed by Drs. Van Meter, Whitney, Wooding, Perkins, Grant, Wetherill; and discussion closed by Drs. Perkins and Grant.

The President's address was delivered by Dr. T. H. Hawkins, of Denver.

Moved by Dr. Blaine that the paper entitled "Treatment of Urethral Stricture by Electrolysis," by Dr. W. W. McEwen, Durango, and paper entitled "Diphtheria," by Dr. H. R. Bull, of Grand Junction, be read by title and referred to the committee on publication, as neither of those gentlemen were able to be present. Seconded and carried.

The Report of House of Delegates was read by Dr. J. M. Blaine.

The President: The next thing in order is the installation of the new officers. I will appoint Dr. Waxham and Dr. Rothwell to conduct the newly elected President to the front.

Gentlemen of the Colorado State Medical Society: The last act of my administration, and a very pleasant one indeed, is to introduce the newly elected President, Dr. Finney.

Dr. Finney: Mr. President: Permit me to congratulate you and the society, at the close of this very excellent meeting, on your success, which has certainly been phenomenal. I believe I am regarded yet as one of the young members of this Society, at least I so regard myself. Realizing that, it is with considerable trepidation that I stand before you as your President-elect. Especially is this so when I glance back over the names of my illustrious predecessors, and feel what is expected of me in order to sustain the high standard of those who have gone before me. In looking over this audience I see a number of the old wheelhorses of this Society with whom it has been my pleasure to meet from year to year during the sixteen years of my membership in this Association, any one of whom would grace this office much better than I can. So it is no wonder that I feel this diffidence. However, ladies and gentlemen, it will be my constant effort to sustain our high standard, and it will be my highest ambition to in every way possible bring to a successful termination next year at Colorado Springs a thoroughly good meeting. I thank you for this honor, the greatest in the possesion of the medical fraternity of Colorado, and I will do my best. Applause.

Dr. Gildea: As a Delegate from Colorado Springs, it gives me great pleasure to introduce the President of our El Paso County Medical Society; that he may cordially invite you all to meet there with us and to assure you that we will give you a good time.

Dr. Swan: I did not know that Dr. Gildea was to make this announcement or this request. But I assure you that the invitation and the hospitality that the profession in Colorado Springs will be glad to show to the Society at the meeting next year, will be altogether wholesome and sincere; and we hope the members of the Society will be there, and we will do the best we can to entertain you and give you a good time.

On motion the Society adjourned sine die.

DELAYED DISCUSSIONS.

The following reports of remarks in discussion were received too late for publication with the papers to which they refer.

Discussion on **Laboratory Diagnosis of Gastric Disease**, by Dr. E. C. Hill. (See p. 348.)

Dr. Van Zant: Mr. President, some fifteen or eighteen years ago, at a meeting of the American Medical Association held in Cincinnati, I recall with very great distinctness the enthusiasm which was created on the floor by a paper read by the great physician, Pepper in which the announcement was probably made for the first time that the absence of free hydrochloric acid in cases of disease of the stomach had given us a sign of gastric cancer. The interest created by the statement was very great; but as the years went on, and further investigations were made, it became apparent that the statement would not hold universally.

It seems to me that the conservative position taken by Dr. Hill is the only correct position which at the present time could be held by the intelligent practitioner. The absence of hydrochloric acid, or its marked diminution—the marked presence of lactic acid, none of these things is to be taken as evidence of the disease; and only by the combination of the chemical with the clinical symptoms and the history, may we arrive at the diagnosis.

I remember well, in an eastern state, of the specialist being called, by a country practitioner, to see two cases which he had diagnosed as carcinoma of the stomach. The specialist made the tests, found there was lactic acid and announced that the cases were not of a malignant character. In the course of several months these cases went down progressively and died; and the post mortem examination in both cases showed that the country practitioner was right, and the specialist was wrong. The one relied on the history of the case, the other on test tube methods, which are evidently not to be relied on as the sole criterion in these cases.

Bone Necrosis Following Typhoid Fever. Discussion on the paper of Dr. Frank Finney. (See page 354.)

Dr. Sheldon: A difficult and important consideration concerning the necrosis of bone following typhoid fever, is the diagnosis. On account of the not infrequent obscurity of the symptoms in some of these cases, the fact that acute local inflammatory signs may be absent, and the pronounced chronic conditions that are sometimes observed in these affections, a quite extensive suppurative post typhoidal bone lesion may be entirely overlooked until the process has progressed to an advanced stage. Thorough and repeated examinations are the only reliable safe-guards that can be depended upon in making an early diagnosis in these cases.

If it has been determined that a patient has recently suffered from an attack of typhoid fever, it is sometimes difficult or impossible to determine if the bony involvement is dependent on the typhoidal bacillus or is the result of a tuberculous infection. This is especially true when the ribs are the seat of the pathological involvement. There are no positive signs or symptoms that will enable us to determine whether the destruction of bone can be attributed to the effects of the typhoid bacillus or the bacillus of tuberculosis. It is important from the standpoint of making a prognosis that a differential diagnosis should be made.

It is impossible to make an absolute diagnosis before an operation is performed. An etiologic diagnosis should be made at the time of the operation by the aid of the microscope. Microscopical examination will not be essential to make a positive diagnosis if sequestration has occurred before the operation is performed. A naked eye examination of the discarded bony fragments is entirely sufficient to determine that the tubercle bacillus is or is not the predominating etiologic factor. A tuberculous bony sequestrum is invariably covered with a layer of granulation tissue that is easily recognized by the naked eye and can be removed with a knife or other metallic instrument. In such membrane a granulation tissue is found inclosing bony sequestra that have resulted from an infection due to the typhoid bacillus or the ordinary pyogenic bacteria.

Diabetes Mellitus in Children. Discussion of the paper of Dr. Frank E. Waxham. (See p. 372.)

Dr. Cattermole: It has seemed to me that diabetes is very prevalent in this state. In six years I have seen five cases in adults and two in children. The children were seven and fourteen years of age, and both died of diabetes.

Duodenal Ulcer Caused by Pressure from Stones in Gall Bladder. Discussion on paper of Dr. George H. Cattermole. (See p. 378.)

Dr. Sheldon: As Dr. Cattermole has well emphasized, the difficult and all-important consideration in these cases is the diagnosis. Although at times these cases can be diagnosed with a certain degree of positiveness, it not infrequently happens that it is impossible to recognize the exact nature and location of the disease.

The important point in getting these patients well is to recognize clearly that an absolute diagnosis is not only impossible but is unnecessary. To handle these cases promptly and efficiently we are not justified in delaying operative interference to relieve these patients in order that a positive diagnosis can be made. We should determine only that the case is, or is not, a surgical one. If there is reason to believe from the history of the case, and from the local findings, that the patient is suffering from a pathological condition located in the upper abdominal region requiring surgical treatment, we should operate at once. The lives of these patients depend entirely upon the time at which the operation is performed, and this should be done as soon as it can be determined that the condition is amenable to surgical treatment. An absolute diagnosis is not essential for the performance of an operation when these serious and many times obscure conditions exist.

Dr. Wetherill: It is always best to make an exact diagnosis where it is possible to do so; but there are many diseases in which it is not possible to make an exact diagnosis, and some in which it is not necessary. In talking with Dr. Charles Mayo about this very subject a year ago, he made this remark to me: "It is our habit at Rochester to make a diagnosis of the surgical condition and settle the questions about the gall bladder and duodenum later, while operating, though it is very often impossible to make an absolute or differential diagnosis in such cases; and if we find things satisfactory we do not crowd; I simply say, if you have a condition that demands operation, operate." Now it seems to me that in these cases this is just the position we all should take. It will save a good many human lives.

Dr. Chrisman: It seems that in the case reported there had been no evidence of disease of the gall bladder or liver, or any evidence of gall stones in the bladder. He had led a sedentary life and had been visited by numerous physicians. He died, and after his death this condition of things was discovered. An operation, of course, would have saved this man's life. Now, we are struck with this conclusion. On the 14th of November, a year ago, I witnessed an operation in which we had the most profound symptoms of gall stones. Dr. Freeman operated in that case, and we found one stone not larger than half a pea in the gall bladder, and that case proved what a serious condition might be caused by a small stone. Dr. McCurdy and myself operated on another case where there were 526 gall stones, and there had never been a symptom of a gall stone in that case.

COUNTY MEDICAL SOCIETIES.

Denver.—The Medical Society of the City and County of Denver met Tuesday, November 1. Dr. C. B. Lyman read a paper upon **abdominal injuries.** Wounds of the abdominal wall may be very extensive without involving the peritoneum. In such cases a very thorough examination should be made before assuming that this is the case. When the abdominal wall has been penetrated it is quite impossible at first to judge if there has been serious injury to the viscera. In the absence of any symptom indicating such injury it may be allowable to watch the case for a few hours and see if the primary shock passes off leaving the patient apparently not much damaged. But unfortunately if surgical interference is delayed until positive symptoms have declared themselves, it is often too late. The surgeon who waits for symptoms of peritonitis loses the opportunity to benefit his patient.

Rupture of the Bladder is always a very grave injury. Four cases were given. Testing for this accident by injection of a known quantity of aseptic fluid and its withdrawal, is a valuable measure; but not entirely devoid of danger. By it germs may be carried from the urethra or bladder, where they are harmless, into the peritoneum, where they might be dan-

gerous. Operation should be done in all cases in which rupture of the bladder is known to exist, or in which there was the doubt that it might exist.

Rupture of the kidney should be investigated by segregation of the urine. If, after such an injury there was no severe persistent shock. or signs of continued hemorrhage, the case might be left without operation. But continued hemorrhage must be stopped by operation.

Punctured wounds of the abdomen were dangerous by injury of the abdominal viscera. Unfortunately the existence of such injury often could not be determined by the symptoms. Very severe abdominal hemorrhage might cause no positive symptoms; and the evidences of peritonitis came too late to be of service. Where there was any doubt an exploratory operation should be done immediately, such operations being in themselves practically free from danger. The exploration should include the careful, systematic inspection of the whole gastro-intestinal tract.

Dr. H. G. Wetherill emphasized the point. that the risk of exploratory operation amounts to nothing. When death follows such an operation it is always because of the original injury. He also dwelt on the absolute necessity of examining the whole gastro-intestinal tract and the other viscera. altho the extensive handling of the peritoneum might slightly increase the risk.

Dr. John Boice, among seventeen cases of injury to the intestines (14 gunshot wounds and three stab wounds), had twelve recoveries and five deaths. We should operate on every case. Then there were cases in which no rupture of the intestinal tube occurred at the time of injury; but did occur subsequently from gangrene, when the patient seemed on the road to recovery. Some of these cases might be saved by exploratory operation.

November 29.

Primary Sarcoma of the Bladder.—Dr. J. A. Wilder reported three cases of this condition that he had met with, two occurring in the practice of Dr. Leonard Freeman and one seen with Dr. S. T. Brown. He also gave a tabulated review of the literature of the subject, including fifty-one cases. The cases seen ranged from 48 to 62 years of age. All three were males. Among the previously reported cases there were thirty-four males, and ten females. In twenty-six cases the condition occurred after forty years of age; in fourteen before ten years. The most constant symptoms were hematuria, and irritation of the bladder. These had lasted from six months to five years, in the cases seen by Dr. Wilder. Of these fifty-four cases all had terminated fatally, except one, in which the patient remained apparently well one year after operation. The only hope was in the early diagnosis, either by means of the cystoscope or an exploratory operation, and the complete removal of the growth.

Benign Stricture of the Esophagus.—Dr. C. D. Spivak classified cases of the kind as congenital or acquired. He reported two cases of congenital narrowing; occurring in father and son, who were compelled to eat very slowly, being able to swallow but little at a time. There was no tendency for this condition to grow worse. Acquired stricture might be cicatricial, might occur from occlusion, by thickening of the walls of the esophagus, by compression from neighboring structures, or it might be spasmodic. He instanced cases of the latter kind, in which the intermittent character of the resistance encountered in passing a bougie—its relaxation after a few minutes —gave grounds for a favorable prognosis which the subsequent history fully justified. He then exhibited a case of cicatricial stricture in a child two and one-half years old. The child had swallowed a quantity of lye on July 25. This was immediately followed by great pain, inability to swallow, and bloody discharge. After a few days these symptoms disappeared and the child appeared to be well until September, when difficulty of swallowing again appeared. and increased until there was complete inability to swallow anything, although the child constantly desired food. A stricture was found, 7½ inches from the teeth, through which it was difficult to pass the smallest instrument. Dilatation by the passage of progressively large soft catheters was commenced. After the second dilatation the child began to swallow food, and its condition rapidly improved. It was now possible to pass an instrument 1-5 of an inch in diameter.

Dr. Spivak reported a case of **appendicitis** occurring in a girl 13 years old. There was no rigidity of the abdomen, no tenderness at the McBurney point. The pain was located over the liver. Thoracic inflammation was excluded, by absence of local signs or increased temperature. Gall-stone was considered improbable on account of the youth of the patient. Operation revealed the appendix situ-

ated just below the right lobe of the liver. It was free but presented a complete ring of gangrene. Its removal was followed by complete recovery.

Dr. Spivak and Dr. C. S. Elder called attention to the importance of having proper provision made for the **discussion of papers** read before the Society; and suggested means for having the character of the papers known to the members before they were read.

A committee appointed to report on a place of meeting for the Society recommended; that the Society secure the Hall of the Denver Academy of Medicine for each Tuesday evening during the year, its use as a reading room to be free to their members on those Tuesday evenings that no meetings were held. On motion this recommendation was adopted.

El Paso.—The regular monthly meeting of the El Paso County Medical Society was held November 9. The evening was devoted to a Symposium on Typhoid Fever, as follows: Etiology and Prophylaxis, Dr. R. K. Hutchings; Diagnosis, Dr. F. L. Dennis; Treatment, Dr. C. F. Gardiner. The discussion was general and quite interesting, and was participated in by Dr. Philip Marvel, of Atlantic City, N. J., and Drs. Beck, Campbell, Caseley, Hanford, Hoagland, Ogilbee, Martin, Rothrock, Scully, Mayhew, M. H. Smith and Solly.

Dr. P. A. Loomis and Dr. C. F. Stough were elected to membership in the Society.

M. P. REYNOLDS, Sec'y.

The Garfield County Medical Society met in Glenwood Springs on November 2, with the following members present: Drs. N. Dynunberg, of Rifle; W. G. Langsford, of Gypsum; and W. W. Cook, L. G. Clark, M. H. Dean and L. A. Robinson, of Glenwood Springs. Dr. N. Dynunberg read a paper on **"General Anesthesia,"** dwelling especially on the advantages of anesthol; and Dr. Langsford read a paper on **"Appendicitis, When and How to Operate."** The Society has thirteen members and meets the first Friday of every other month. Dr. Dean will entertain the Society when it meets in January at his residence.

A. L. ROBINSON, Sec'y.

Las Animas.—The regular meeting of the Las Animas County Medical Society was held November 11 at the office of Dr. James G. Espey, Dr. A. K. Carmichael presiding.

Dr. D. G. Thompson presented an interesting paper on **"Ochsner Treatment of Appendicitis,"** with a summary of cases in which he had made use of it. The paper was followed by general discussion.

A circular communication from the Chairman of Organization Committee of the State Medical Society for revision of by-laws was read, and action postponed until the next regular meeting, when the proposed changes will be made in conformity with the recommendation.

A letter from Dr. C. A. L. Reed, President of the Medical Legislative League (to the local member, Dr. J. T. Forhan) was read; and a motion unanimously carried that each member be instructed to use all honorable efforts with the county senators and representatives toward the passage of medical legislation, to take the place of the present ineffective and inoperable law.

Following the abandonment of our old organization and the reorganization under the new charter our membership dues were not collected in full. Action was taken at this meeting to correct the error, which it is hoped will not retard the progress for which we are so anxiously striving. J. G. ESPEY, Sec'y.

Montrose.—The Montrose County Medical Society held no meeting in November, on account of the inability of the members to be present.

Pueblo.—The regular meeting of the Pueblo County Medical Society was held Tuesday evening, November 1, with a large attendance. The paper of the evening was read by Dr. Crum Epler, subject: **"Treatment of Internal Hemorrhoids."** The writer considered first the palliative measures, by medicinal and other applications, and stated that he did not believe they ever produced a cure. The injective treatment was mentioned, and condemned as unscientific and dangerous. The clamp and cautery method was given, as the suitable method of operative procedure in selected cases. The ligature method was described in detail as the one applicable to the majority of cases.

A general discussion followed, by members present, a few of whom expressed a preference for clamp and cautery in ordinary cases.

November 15.

The regular meeting of the Pueblo County Medical Society was held November 15, Dr. F. W. H. Baker in the chair.

Dr. A. F. Hutchinson read a paper entitled **"Puerperal Sepsis."** The writer stated that all cases are due to neglect or ignorance on the

part of some one. Under the head of "Treatment" the prophylactic measures as practiced in modern hospitals, were described and advocated. The sharp curette was condemned and he advised against the use of the douche, as it interferes with the normal bactericidal vaginal secretions. The writer advised careful examination of the vagina and uterus. If wounds of vagina or cervix are found, they are to be treated as wounds elsewhere. The uterus should be explored and if placental tissues or membranes are found they should be removed with the finger or dull curette, and the uterus irrigated but not packed.

The paper was discussed at length by Drs. Stoddard and Marmaduke. Dr. Hutchinson left after the meeting for Durango, where he expects to locate. He was given a vote of thanks by the Society for his kindness in preparing a paper before leaving.

A communication from the Committee on Organization of the State Society was read; and following their suggestions, amendments to the Society's By-Laws were introduced making its fiscal year correspond to that of the State Society, etc.

MADISON J. KEENEY, Sec'y.

Weld County.—At the meeting of the Weld County Medical Society, held in Greeley, November 28, there was a fair attendance of members. After the transaction of the routine business, Dr. Leonard Freeman, of Denver, by invitation, gave a clear and concise talk on **"The Diagnosis of Diseased Conditions on the Right Side of the Body"**—particularly the abdomen, but having especial reference to **appendicitis.** He called attention to the fact that pain was often widely radiated from the lesions that caused it. That pneumonic trouble, originating at the tip of the lung below, might and often did radiate pain down to the hypogastrium. So did morbid liver conditions, especially when acute, as gall stones or inflammations of the gall cyst and its adjacent surroundings. So did stomach conditions, as in hyperchlorhydria; ulcer of the duodenum; inflamed kidney, especially concretions in that organ, also tubercular kidney, moveable and displaced kidney, if rather extreme. Appendicitis was the central idea. Intussuception of the bowel, hernia, epididymitis and vesiculitis in the male, and tubal inflammations and extra-uterine pregnancy in the female. Dr. Freeman gave a clear exposition of the methods in use for differentiating these lesions. He dwelt particularly on the importance of—in all cases—first obtaining a clear and concise history, as far back in the past as possible. At the close of his talk Dr. Freeman expressed the opinion that the expert diagnostician was, or should be, considered the chief of the specialists.

Dr. S. D. Van Meter, of Denver, being present, by request, followed with a few remarks, in which he heartily endorsed the position taken and statements of Dr. Freeman, elucidating them by narrating from his personal experience as a sufferer from appendicitis. Dr. R. F. Graham, of Greeley, also had taken his own prescription successfully, and was happy to laud the lecture just listened to.

G. LAW, Sec'y.

OTHER MEDICAL SOCIETIES.

The Denver Clinical and Pathological Society.—The regular monthly meeting of the Denver Clinical and Pathological Society was held November 11.

Dr. Freeman reported a case operated last May for **gall stones.** Numbers of adhesions were found, including adhesions to the stomach wall. A gall stone was found adherent to the common duct. Recovery followed. Two months later the patient had attacks of pain in the epigastrium. Five months after leaving the hospital, Dr. Freeman was called, and found the patient in collapse. Sugar was found in the urine, and the patient died in forty-eight hours. The condition had probably caused **pancreatitis,** and this had caused **diabetes.** Discussed by Drs. Craig, Powers, Bergtold and Sewall.

Dr. Whitney discussed the several conditions of (1) cramps in the legs; (2) tinnitus aurium; (3) piles, etc.; with some consideration of the surgical treatment for the latter condition, also the wrapping of adhesive plaster about the nozzle of a syringe to act as an obdurator. Discussed by Drs. Stover, Levy, Hall, Bergtold, Powers, Grant, Rogers, Wetherill, Edson and Black.

Dr. Wetherill reported a case with probable completion of pregnancy about the 24th inst., having well-defined foetal **heart murmurs in-utero,** their presence having been verified by Dr. Hall. Dr. Wetherill offered to demonstrate the case to two members of the Society, and the President appointed Drs. Whitney and Bergtold as that committee.

Foreign Body in the Bladder. Dr. Rogers reported a case where two and one-half inches of hard rubber catheter had passed into the

bladder while the patient was practicing self-irrigation. While preparing to operate, the fragment of catheter was passed by the patient while urinating. Discussed by Drs. Whitney and Beggs.

Dr. McGraw reported a case of abdominal pain in which an examination of the blood disclosed the plasmodium malariae, and treatment by quinine resulted in recovery.

Dr. Powers exhibited a boy of nine years, seen in consultation with Dr. Kenney, who was suffering from septic arthritis of the left ankle joint resulting from a puncture with a nail. The ankle joint was thoroughly opened and through and through drainage, with a number of large tubes, established. Immersion of the body to the shoulders for five days controlled an extensive lymphangitis, the foot and leg to the knee being continually immersed for a period of five weeks in a solution of 1 to 30,000 bichloride, and wet dressings of the same for the balance of eight weeks. The present condition showed some movement of the ankle joint, and the boy walks on the ball of his foot, and gives fair prospects of good result. Discussed by Drs. Freeman and Craig.

Dr. Grant exhibited an appendix from a recent case. The appendix was attached to the abdominal wall, and a concretion was found outside of it and the gut, with no appreciable opening in either. There was no pus. Drainage and recovery.

Dr. Levy exhibited a case of (1) Polypus from naso-pharynx. (2) Rhinolith, weight 65½ grains. Discussed by Dr. Waxham.

Drs. Hall and McGraw exhibited (1) echinococcus, (2) cysts of liver.

Dr. Stover exhibited a skiagram showing a tumor, probably connected with the kidney.

Drs. Hall and Cooper exhibited a specimen showing tubercular ulcers in the intestine.

F. W. KENNEY, Sec'y.

DEATHS.

Dr. J. Wallace Collins, of Victor, died at his home in that city, October 31. He was a graduate of the Denver College of Medicine in the class of 1888. He had been engaged in practice in Cripple Creek and Victor since 1893. He had been county physician and health officer in Teller county, and held numerous appointments under railroad and insurance companies.

BOOKS.

Text-Book of Physiology.—By Isaac Ott, A. M., M. D., Professor of Physiology in the Medico-Chirurgical College of Philadelphia; 8 vo.; 563 pages, 137 illustrations; cloth, $3.00. F. A. Davis Company, Philadelphia; 1904.

This book, writtten at the solicitation of students, aims to present the chief facts of physiology which are to be applied in medical practice. It omits laboratory technique, and gives small space to electro-physiology. This is in strong contrast with some of our most famous and extended text-books on this subject, which approach it from the theoretical and laboratory standpoint. For the medical student or practitioner this is a distinct improvement. The diagrams which illustrate the book have been well chosen for the service they render in making a clear presentation of the subject, rather than for artistic finish, or because they were easily obtainable from previously published works.

International Clinics—Edited by A. O. J. Kelly, A. M., M. D., Vol. III, Fourteenth series; cloth, $2.00. Philadelphia; J. B. Lippincott Co.; 1904.

The international character of the publication is well illustrated in the present volume. Fourteen of the twenty-seven contributors are foreign physicians of the highest rank. More than one-third of this volume is devoted to Syphilis, including articles on "Uncertainty as to Inoculation," by Campbell Williams, of London; "Laryngeal Syphilis and Tabes," by Chauffard, of Paris; "Syphilis and Suicide," "Treatment by Calomel Injections," by Prof. Fournier, of Paris; and some eight other articles. The papers on "Treatment" deal with the digestive disturbances of Pulmonary Tuberculosis, the Rest Cure for Chronic Constipation, and the Treatment of Diabetes Mellitus. The Departments of Medicine, Surgery, Gynecology and Neurology are all represented by valuable papers.

Progressive Medicine, Vol. II, September, 1904—Edited by Hobart Amory Hare, M. D., octavo, 248 pages; 19 illustrations; per annum, cloth bound, $9.00; paper, $6.00. Lea Brothers & Co., Philadelphia and New York.

This volume gives the essence of the world's literature for the last year concerning: Diseases of the Thorax and its Viscera, including the Heart, Lungs and Blood Vessels; Dermatology and Syphilis; Diseases of the Nervous System; and Obstetrics. The several articles are prepared by Wm. Ewart, of London; W. S.

Gottheil, of New York; W. G. Spiller, of Philadelphia; and R. C. Norris, of Philadelphia. The section on Pulmonary Tuberculosis occupies 33 pages and refers to 88 different papers, none of which are considered of such overshadowing importance as to merit extended citation. As Progressive Medicine goes on from year to year its editors show increased ability to select the new matter of essential value from the year's literature.

LISTS OF OFFICERS AND MEMBERS.

The present volume of Colorado Medicine covering over more than one calendar year, lists of officers and committees are given below for the society years of 1903-4 and 1904-5. The list of members is revised to December, 1904.

OFFICERS AND COMMITTEES FOR 1903-1904.

President:

Thomas H. Hawkins, Denver.

Vice Presidents:

1st. J. Tracy Melvin, Saguache.
2d. A. C. H. Friendmann, Colorado Springs.
3d. R. F. Graham, Greeley.

Secretary:

J. M. Blaine, Denver.

Treasurer:

Wm. J. Rothwell, Denver.

Board of Councillors.

Term Expires:
1904—R. F. Graham, Greeley.
T. J. Forhan, Trinidad.
1905—H. R. Bull, Grand Junction.
S. Kahn, Leadville.
1906—P. J. McHugh, Fort Collins.
E. J. A. Rogers, Denver.
1907—J. N. Hall, Denver.
Hubert Work, Pueblo.
1908—C. F. Gardiner, Colorado Springs.
S. D. Hopkins, Denver.

Delegates to American Medical Association:

Delegates:

Term Expires:
1904—Sol. G. Kahn, Leadville.
1905—W. A. Jayne, Denver.

Alternates:

Term Expires:
1904—W. W. Ashley, Ouray.
1905—C. K. Fleming, Denver.

Publication Committee:

Term Expires:
1904—Robert Levy, Denver.
1905—Edward Jackson, Denver.
1906—S. E. Solly, Colorado Springs.

Committee on Scientific Work:

J. M. Blaine, Denver, Chairman.
J. N. Hall, Denver.
Edward Jackson, Denver.

Committee on Public Policy and Legislation:

S. D. Van Meter, Denver, Chairman.
J. M. Blaine, Denver.
W. W. Grant, Denver.
C. K. Fleming, Denver.
S. G. Bonney, Denver.
W. W. Reed, Boulder.

Committtee on Necrology:

C. D. Spivak, Denver, Chairman.
G. Law, Greeley.
M. Kahn, Leadville.
E. M. Marbourg, Pueblo.

OFFICERS AND COMMITTEES FOR 1904-1905.

President:

Frank Finney, La Junta.

Vice Presidents:

1st. F. H. McNaught, Denver.
2d. L. M. Giffin, Boulder.
3d. B. F. Cunningham, Cripple Creek.

Secretary:

J. M. Blaine, Denver.

Treasurer:

Wm. J. Rothwell, Denver.

Board of Councillors:

Term Expires:
1905—H. R. Bull, Grand Junction.
S. Kahn, Leadville.
1906—P. J. McHugh, Fort Collins.
E. J. A. Rogers, Denver.
1907—J. N. Hall, Denver.
Hubert Work, Pueblo.
1908—C. F. Gardiner, Colorado Springs.
S. D. Hopkins, Denver.
1909—J. T. Melvin, Saguache.
W. W. Reed, Boulder.

Delegates to American Medical Association:

Delegates:

Term Expires:
1906—P. F. Gildea, Colorado Springs.
1905—W. A. Jayne, Denver.

Alternates:

Term Expires:
1906—H. A. Black, Pueblo.
1905—C. K. Fleming, Denver.

Publication Committee.

1905—Edward Jackson, Denver.
1906—S. E. Solly, Colorado Springs.
1907—C. E. Edson, Denver.

Committee on Scientific Work:

G. W. Miel, Denver, Chairman.
S. E. Solly, Colorado Springs.
J. M. Blaine, Denver.

Committee on Credentials:

J. M. Blaine, Denver, Chairman.
W. T. Little, Canon City.
C. K. Fleming, Denver.

Committee on Public Policy and Legislation:

C. H. Catherwood, Denver, Chairman.
S. D. Van Meter, Denver.
W. H. Swan, Colorado Springs.
Ex-Officio:
Frank Finney, La Junta.
J. M. Blaine, Denver.

Committee on Auditing:

S. G. Kahn, Leadville, Chairman.
C. A. Powers, Denver.
Hubert Work, Pueblo.

Committee on Necrology:

W. W. Reed, Boulder, Chairman.
C. D. Spivak, Denver.
H. R. Bull, Grand Junction.

MEMBERS OF COLORADO STATE MEDICAL SOCIETY.

Arranged Alphabetically According to County Societies.

BOULDER COUNTY.

Allen, H. W., Boulder.
Ambrook, M. L., Boulder.
Andrew, C. F., Longmont.
Baird, W. J., Boulder.
Bell, Amy, Boulder.
Barbour, L. P., Boulder.
Cattermole, G. H., Boulder.
Campbell, Jacob, Boulder.
Christy, G. H., Lafayette.
Craghead, W. S., Marshall.
Dodge, H. O., Boulder.
Farrington, F. H., Boulder.
Giffin, L. M., Boulder.
Gilbert, O. M., Boulder.
Harlow, W. P., Boulder.
Holden, C. E., Longmont.
Jolley, W. A., Boulder.
Lindsay, Kate, Boulder.
McDowell, U. D., Longmont.
Miles, M. E., Boulder.
Monahan, D. G., Erie.
Parker, A. C., Boulder.
Porter, V. W., Lafayette.
Queal, E. B., Boulder.
Rand, H. F., Boulder.
Reed, W. W., Boulder.
Robertson, E. H., Boulder.
Rodes, L. O., Boulder.
Russell, J. A., Boulder.
Smith, W. W., Erie.
Trovillion, E. B., Boulder.
White, W. J., Longmont.
Wood, Lucy, Boulder.
Wolfer, C. T., Louisville.
Weist, Sard, Longmont.

DELTA COUNTY.

Brown, L. G., Summerset.
Butterbaugh, W. S., Cory.
Follansbee, W. F., Paonia.
Hazlett, H. W., Paonia.
Hick, L. A., Delta.
Houts, S. B., Delta.
McCartney, O. P., Delta.
Miklejohn, D. V., Hotchkiss.
Miller, A. E., Cory.
Stockham, A. H., Delta.
Whiting, J. A., Eckert.
Walker, J. D., Paonia.

CITY AND COUNTY OF DENVER.

Those residing outside of Denver have the name of the state appended to the address.

Allen, J. H., 1434 Glenarm Street.
Arneill, J. R., Majestic Building.
Auerbach, L., Cass and Graham Building.
Bagot, W. S., Opera House Block.
Bane, W. C., Steele Block.
Barney, L. M., 213 Broadway.
Bartholomew, H. B., 8 East First Avenue.
Beatty, J. S., 2636 Boulevard F.
Bennett, A. L., Majestic Building.
Black, Melville, Majestic Building.
Blaine, J. M., Steele Block.
Bles, V. A., Jackson Building.
Blickensderfer, J. C., 1409 Broadway.
Boice, John, Barth Block.
Bonney, S. G., 726 Fourteenth Street.
Brown, S. T., 1646 Court Place.
Buchtel, W. H., 1618 Glenarm Street.
Burdick, W. N., 1628 Lincoln Avenue.
Burg, W. F., California Building.
Burns, T. M., 1434 Glenarm Street.

Byles, F. G., Mack Block.
Carlin, P. V., 1406 Stout Street.
Carmody, T. E., 1427 Stout Street.
Case, A. G., 1434 Glenarm Street.
Chase, John, Kittredge Building.
Childs, S. B., 732 Fourteenth Street.
Collins, E. W., McPhee Building.
Collins, Moses, Jewish Hospital.
Conroy, C. P., 1434 Glenarm Street.
Cooper, C. E., California Building.
Coover, D. H., California Building.
Courtney, J. E., 1434 Glenarm Street.
Craig, W. B., 122 Sixteenth Avenue.
Crews, G. B., 2417 W. Thirty Second Avenue.
Cuneo, Joseph, 1509 Larimer Street.
Cunningham, A. A., 450 South Broadway.
Davis, J. B., 1209 Seventeenth Street.
Dean, E. F., 823 Fourteenth Street.
De Cunto, P., 1680 Larimer Street.
Delehanty, Edward, 1406 Stout Street.
Denison, Charles, 815 Fourteenth Street.
Devlin, J. B., Barth Block.
Donaldson, C. C., 350 South Lincoln Avenue.
Drechsler, William, Mack Block.
Durbin, L. T., Nevada Building.
Edson, C. E., McPhee Building.
Elder, C. S., Temple Court.
Elliott, H. R., 42 W. Ellsworth Street.
Elliott, J. F., Physicians' Building.
Elsner, John, 1014 Fourteenth Street.
Engzelius, A. E., 1434 Glenarm Street.
Farnsworth, J. A., Littleton, Colo.
Feil, G. P., Mack Block.
Ferguson, C. J., Physicians' Building.
Fisk, S. A., Denver Club.
Fleming, C. K., California Building.
Foster, J. M., Stedman Building.
Freeman, Leonard, California Building.
Gale, M. J., McPhee Building.
Gallaher, T. J., California Building.
Garvin, D. E., Golden, Colo.
Gengenbach, F. P., 1430 Glenarm Street.
Gibson, J. D., 1423 Stout Street.
Gorsuch, J. C., California Building.
Graham, C. A., Stedman Building.
Graham, J. W., 1007 Pennsylvania Avenue.
Grant, A. E., Tabor Block.
Grant, W. W., Mack Block.
Greedy, F. A., Opera House Block.
Guthrie, A. B., Kittredge Building.
Hall, J. N., Jackson Building.
Harris, A. H., Colorado Building.
Hassenplug, G. K., 1116 Sixteenth Street.
Harvey, H. G., California Building.
Hawes, Mary, Physicians' Building.
Hawkins, T. H., 1740 Welton Street.
Hess, W. L., California Building.
Hershey, E. P., California Building.
Hickey, C. G., 1427 Stout Street.
Hill, E. C., 1618 Glenarm Street.
Hilliard, Walter, 1415 Welton Street.
Hillkowitz, P., 1427 Stout Street.
Hoffman, O. W., 1515 Stout Street.
Holden, G. W., Agnes Memorial Sanitorium.
Holmes, A. M., Jackson Building.
Hopkins, J. R., Steele Block.
Hopkins, S. D., Jackson Building.
Horn, A. G., Coronado Building.
Hughes, T. A., 728 Sixteenth Street.
Hutchinson, J. C., 615 Seventeenth Street.
Jackson, Edward, 1434 Glenarm Street.
Jaeger, Charles, California Building.
Jayne, W. A., McPhee Building.
Kennedy, Donald, Jackson Building.
Kenny, F. W., Stedman Building.
King, D. McD., Bisbee, Ariz.
Kinney, J. E., 1427 Stout Street.
Lawney, Eleanor, 1434 Glenarm Street.
Leavitt, B. C., 854 Pearl Street.
Lemen, L. E., 1742 California Street.
Levy, Robert, California Building.
Lewandowski, J. D., California Building.
Libby, G. F., 1434 Glenarm Street.
Leibhardt, L. L., Mack Block.
Locke, C. E., 1355 Welton Street.
Lockhard, L. B., 1427 Stout Street.
Long, C. W., 400 Clarkson Street.
Love, M. C. T., 1434 Glenarm Street.
Lyman, C. B., California Building.
Lyon, O., Jackson Building.
McDermith, S. T., Temple Court.
McGiffin, M. N., Steele Block.
McGraw, H. R., Jackson Building.
McGugan, Arthur, Majestic Building.
McLauthlin, H. W., Mack Block.
McLean, C. H., 1434 Glenarm Street.
McNaught, F. H., Coronado Building.
Macomber, G. N., 1415 Welton Street.
Mann, Alfred, California Building.
Martin, H. H., Cooper Building.
Midgley, A. E., 1427 Stout Street.
Miel, G. W., 615 Seventeenth Street.
Miller, S. W., Stedman Building.
Mitchell, W. C., California Building.
Moleen, George A., Mack Block.
Mugrage, S. G., 1860 Welton Street.
Nesmith, F. M., Goldfield, Nev.
Neuhaus, G. E., 241 Lincoln Avenue.
Neuman, D. E., 1434 Glenarm Street.
Nickerson, W. M., Opera House Block.
O'Connor, J. W., Equitable Building.
Oettinger, B., Jacobson Building.

Packard, G. B., 732 Fourteenth Street.
Palmer, W. A., Castle Rock, Colo.
Perkins, I. B., Stedman Building.
Perkins, J. M., Stedman Building.
Pershing, H. T., Stedman Building.
Powell, C. A., 1632 Welton Street.
Powers, C. A., Stedman Building.
Preston, M. E., California Building.
Prewitt, F. E., Nevada Building.
Purcell, E. C., 4606 Josephine Street.
Purcell, J. W., 3749 Downing Avenue.
Ramsey, R. T., Physicians' Building.
Ray, J. C. B., Physicians' Building.
Richmond, C. B., 1737 Welton Street.
Rivers, E. C., 1632 Welton Street.
Roehrig, G. F., McPhee Building.
Rogers, E. J. A., 222 W. Colfax Avenue.
Rogers, F. E., Littleton, Colo.
Root, M. R., Jackson Building.
Rothwell, E. J., 3021 Lawrence Street.
Rothwell, P. D., Cooper Building.
Rothwell, W. J., Cooper Building.
Rover, H. W., Hughes Block.
Scherrer, E. A., Stedman Building.
Schollenberger, C. F., 2309 Larimer Street.
Seebas, A. R., 1349 California Street.
Sewall, Henry, 23 East Eighteenth Avenue.
Sharpley, W. H., Physicians' Building.
Shotwell, W. E., 3221 Humboldt Street.
Simon, S., Jackson Building.
Sirois, E., Sixteenth and Arapahoe Streets.
Snitcher, H. E., 3939 Homer Boulevard.
Spivak, C. D., 1421 Court Place.
Stedman A., Stedman Building.
Steeves, C. P., Majestic Building.
Stevens, E. W., McPhee Building.
Stover, G. H., 1443 Glenarm Street.
Taussig, A. S., 1434 Glenarm Street.
Taylor, H. L., 1747 California Street.
Taylor, T. E., Physicians' Building.
Teelé, M. B., 923 South Tenth Street.
Thompson, David, 766 South Eleventh Street.
Thorp, R. L., Charles Building.
Tuxbury, F. P., Majestic Building.
Van Meter, S. D., 1723 Tremont Street.
Van Zant, C. B., 1427 Stout Street.
Von der Smith, P., Barth Block.
Vroom, J. N., Mack Block.
Walbrach, C. E., 911 Sixteenth Street.
Walker, C. E., Jacobson Building.
Warner, E. R., California Building.
Waxham, F. E., Jackson Building.
Wetherill, H. G., 1632 Welton Street.
Whitney, H. B., Temple Court.
Wilder, J. A., Stedman Building.
Williams, S., California Building.
Willis, J. T., Sulphur Springs, Colo.
Wilson, W. E., 2535 Champa Street.
Wooding, B. F., Brown Palace Hotel.
Worthington, A. K., Cass & Graham Building.
Zederbaum, A., 110 Fifteenth Street.

EL PASO COUNTY.

Those residing outside of Colorado Springs have the name of the state appended to the address.

Anderson, B. P., 106 North Cascade Avenue.
Arnold, C. R., Bank Block.
Beck, L. H., Manitou, Colo.
Blackman, A. A., 801 North Nevada Avenue.
Campbell, W. A., 424 North Nevada Avenue.
Caseley, W. N., 721 East Boulder Street.
Christopher, D. I., 5 North Tejon Street.
Cook, J. M., Plaza Hotel.
Daniels, H. P., Colorado City, Colo.
Dennis, F. L., 130 E. San Miguel Street.
Estill, J. T., 218 E. Willamette Avenue.
Friedmann, A. C. H., 2 N. Cascade Avenue.
Gardiner, C. F., 818 N. Cascade Avenue.
Garnett, A. H., Exchange Bank Building.
Gildea, P. F., 2 N. Cascade Avenue.
Gillett, O. R., Bank Block.
Grover, B. B., Colorado Building.
Hanford, P. O., Bank Block.
Hart, J. A., 806 North Nevada.
Hoagland, H. W., 327 North Nevada.
Holder, C. A., 1323 North Tejon.
Horn, T. J., 107 E. Pike's Peak Avenue.
Hutchings, R. K., 323 North Tejon.
Kendrick, W. H., 24 South Tejon.
Loomis, P. A., 2 North Cascade.
Madden, J. H., 1401 Colorado Avenue.
Martin, W. F., 801 North Nevada.
Mayhew, D. P., 2 North Cascade Avenue.
McClanahan, Z. H., 18 East Monument.
Meek, F. B., Cheyenne Block.
Morrison, C. S., Colorado City, Colo.
Mushat, J. S., Fountain, Colo.
Neeper, E. R., P. O. Block.
Ogden, W. C., Cheyenne Block.
Ogilbee, H. M., Manitou, Colo.
Patterson, J. A., 805 North Tejon Street.
Peavey, J. L., 726 North Tejon Street.
Perkins, P. H., 5 North Tejon Street.
Reynolds, M. P., 205 Colorado Building.
Rice, D. H., 117 E. Pike's Peak Avenue.
Richardson, H. L., 107 E. Pike's Peak Avenue.
Robinson, J. R., Bank Block.
Rothrock, F. B., 117 E. Pike's Peak Avenue.
Scully, D. J., 1129 North Nevada.
Smith, D. K., 215 Cache La Poudre Street.
Smith, M. H., Bank Block.

Solenberger, A. R., 106 E. St. Vrain Street.
Solly, S. E., 2 North Cascade Avenue.
Spicer, O. W., De Graff Block.
Strickler, Wm., 706 North Nevada Avenue.
Stough, C. F., Bank Block.
Swan, W. H., 706 North Nevada Avenue.
Webb, G. B., 1222 North Cascade Avenue.

FREMONT COUNTY.

Adkinson, R. C., Florence.
Cannon, J. W., Canon City.
Carrier, F. N., Canon City.
Condit, H. C., Florence.
Craven, T. H., Canon City.
Cummings, G. D., Florence.
Edwards, J. L., Florence.
Emery, G. C., Canon City.
Graves, H. C., Canon City.
Holmes, R. E., Canon City.
Little, W. T., Canon City.
Moore, F. R., Florence.
Moore, T. B., Canon City.
Palmer, T. D., Canon City.
Paxton, R. H., Florence.
Phelps, M. E., Canon City.
Rambo, J. W., Florence.
Wade, P. A., Canon City.
Williamson, W. A., Rockvale.

GARFIELD COUNTY.

Braden, J. M., Carbondale.
Clark, L. G., Glenwood Springs.
Crook, W. W., Glenwood Springs.
Dean, M. H., Glenwood Springs.
Dymenburg, N., Rifle.
Foster, N. C., Gulch.
Greene, J. L., Eagle.
Hotopp, Theo M., Glenwood Springs.
Le Rossignol, W. J., Rifle.
Lockard, W. G., New Castle.
Macalester, R. K., Glenwood Springs.
Robinson, A. J., Aspen.
Robinson, L. A., Glenwood Springs.

LAKE COUNTY.

Boyd, E. T., Leadville.
Calkins, H. A., Leadville.
Condon, J. F., Breckenridge.
Connell, F. G., Salida.
Griffith, B. F., Leadville.
Jeannotte, J. A., Leadville.
Heron, J. H., Denver.
Kahn, M., Leadville.
Kahn, S. G., Leadville.
Keith, J. G., Leadville.
Lathrop, H. R., Como.
Law, John, Leadville.
McDonald, A. J., Leadville.
Mayne, O. J., Como.
Roe, J. F., Salida.
Sumner, C. O., Alma.
Whitmore, E. A., Leadville.

LARIMER COUNTY.

Bailey, M. M., Loveland.
Coleman, O. E., Fort Collins.
Kickland, W. A., Fort Collins.
McFadden, J. G., Loveland.
McHugh, P. J., Fort Collins.
Morrill, E. L., Fort Collins.
Reckly, Mary D., Fort Collins.
Stuver, E., Fort Collins.
Sutherland, W. B., Loveland.

LAS ANIMAS COUNTY.

Beshoar, B. B., Trinidad.
Beshoar, M., Trinidad.
Carmichael, A. K., Trinidad.
Chapman, W. S., Rouse.
Conway, W. Z., Tercio.
Dayton, D. F., Trinidad.
Davenport, R. G., Trinidad.
Dowling, J. T., Sopris.
Espey, J. G., Trinidad.
Espey, J. R., Trinidad.
Forham, T. J., Trinidad.
Freudenthal, A., Trinidad.
Gibbs, M. D., Van Houten, N. M.
Grass, John, Trinidad.
Hutchinson, Wm., Trinidad.
Jaffa, Perry, Trinidad.
McClure, C. O., Starkville.
Ogle, W. M., Primero.
Robinson, G. W., Trinidad.
Thompson, D. G., Trinidad.
Trout, A. L., Berwind.

MESA COUNTY.

Abbott, U. S., Grand Junction.
Bull, H. R., Grand Junction.
Hanson, K., Grand Junction.
Hards, I. B., Grand Junction.
Henderson, H. S., Grand Junction.
Ingersoll, L. F., Grand Junction.
McKeeby, G. E., Pueblo.
Smith, F. R., Grand Junction.
Taylor, A. G., Grand Junction.
Warner, G. R., Grand Junction.
Welles, F. H., Grand Junction.
Zinke, Wm., Collbran.

MONTROSE COUNTY.

Clay, O. M., Montrose.
Coleman, J. F., Montrose.
Collins, H. M., Montrose.
Collins, J. W., Montrose.
Johnson, A., Montrose.
Meredith, H. H., Montrose.
Niles, Johnson, Olathe.
Schermerhorn, Fred, Montrose.
Tinges, Frank, Olathe.

NORTHEAST MEDICAL SOCIETY.

Babcock, M. L., Julesburg.
Chipman, J. C., Sterling.
Greig, Wm., Sterling.
Monroe, D. D., Hillrose.

OTERO COUNTY.

Edwards, E. G., La Junta.
Finney, Frank, La Junta.
Hall, H. E., La Junta.
Haskins, B. F., La Junta.
Jefferey, J. E., Ordway.
Kearby, E. W., Rocky Ford.
Kearns, J. E., La Junta.
Lawson, J. A., Rocky Ford.
McDonald, W. J., Fowler.
Moody, A. N., Fowler.
Moore, W. W., La Junta.
Pollack, R. M., Rocky Ford.
Ragsdale, E. W., La Junta.
Ray, J. E., Sugar City.
Sheldon, D. W., Manzanola.
Shelton, E. K., Rocky Ford.
Sigman, H. G., Rocky Ford.
Smith, Fisher, Rocky Ford.
Stubbs, A. L., La Junta.
Stubbs, Jessie, La Junta.

OURAY COUNTY.

Ashley, W. W., Ouray.
Crosby, L. G., Ouray.
Rowan, W. W., Ouray.
Slick, B. B., Ridgway.
South, John, Ouray.
Stadler, L. C., Ouray.

PUEBLO COUNTY.

Baker, W. H., Pueblo.
Baker, W. T. H., Pueblo.
Black, H. A., Pueblo.
Black, J. A., Pueblo.
Black, L. T., Pueblo.
Bulette, W. W., Pueblo.
Campbell, W. H., Pueblo.
Corwin, R. W., Pueblo.
Darnall, R. F., Pueblo.
De Rosa, B., Pueblo.
Dodds, E. S., Pueblo.
Dorland, W. L., Pueblo.
Duggins, G. G., Pueblo.
Dyer, H. C., Segundo.
Elder, E. A., Pueblo.
Ellis, A. A., Pueblo.
Epler, Crum, Pueblo.
Fugard, A. L., Pueblo.
Heller, P. H., Pueblo.
Hoch, W. R., Pueblo.
Inglis, John, Pueblo.
Keeney, M. J., Pueblo.
King, A. T., Pueblo.
McDonald, W. H., Pueblo.
McDonnell, J. J., Pueblo.
McLean, Luke, Pueblo.
Marbourg, E. M., Pueblo.
Marmaduke, C. V., Pueblo.
Marshall, R., Pueblo.
Mohlan, F. G., Pueblo.
Nachtrieb, Josephine, Pueblo.
Oertel, H. B., Pueblo.
Robe, R. C., Pueblo.
Rich, W. F., Pueblo.
Scarlet, A. W., Pueblo.
Sedwick, W. A., Pueblo.
Senger, W., Pueblo.
Singer, F., Pueblo.
Smith, C. E., Pueblo.
Stoddard, T. A., Pueblo.
Taylor, C. F., Pueblo.
Williams, B. T., Pueblo.
Work, Hubert, Pueblo.

SAN JUAN-LA PLATA COUNTIES.

Barnes, L. S., Durango.
Clark, L. H., Mancos.
Cornell, H. M., Edith.
Davis, A. L., Durango.
Driver, G. S., Durango.
Haggarth, John, Durango.
Hurd, L. C., Durango.
Kaylor, J. W., Durango.
Lefurgey, H. C., Durango.
McEwen, W. W., Durango.
Pascoe, J. N., Silverton.
Potts, C. N., Silverton.
Rader, W. H., Durango.
Reavley, E., Silverton.
Turrell, H. C., Durango.
Wilkinson, W. W., Silverton.

SAN LUIS VALLEY.

Conejos, Costilla, Mineral, Rio Grande and Saguache Counties.

Biles, J. A., Amethyst.
Brodburn, G. A., Center.
Foster, E. L., Denver.
Hamilton, George, La Jara.
McFadzean, J., Del Norte.
McKibbin, Samuel, Amethyst.
Martin, E. F., Creede.
Melvin, J. T., Saguache.
Orr, C. A., Alamosa.
Pollock, A. R., Antonito.
Shippey, O. P., Villa Grove.
Whedon, E. E., Monte Vista.

SAN MIGUEL COUNTY.

Allen, E. D., Telluride.
Allen, J. Q., Telluride.
Bancroft, I. R., Telluride.
Brown, A. S. F., Telluride.
De Lannoy, C. W., Telluride.
Hadley, Edgar, Telluride.
Hadley, Murray, Telluride.
Sheldon, J. G., Telluride.
Whiting, F. A., Telluride.

TELLER COUNTY.

Campbell, A. J., Victor.
Cohen, H. M., Victor.
Cunningham, B. F., Cripple Creek.
Deemer, G. W., Victor.
Driscoll, W. E., Goldfield.
Dunwody, J. A., Cripple Creek.
Elliott, C. E., Victor.
Gaston, J. B., Cripple Creek.
Hayes, Andrew, Cripple Creek.
Hereford, J. H., Cripple Creek.
Holly, J. M., Victor.
Jones, B. F., Goldfield.
King, W. W., Cripple Creek.
Latimer, M. A., Victor.
McIntyre, T. A., Florissant.
McKenzie, George, Victor.
Magruder, A. C., Cripple Creek.
Meire, J. E., Cripple Creek.
Pennock, V. R., Cripple Creek.
Polly, J. B., Elkton.
Polly, K. C., Elkton.
Robison, W. K., Victor.
St. Clair, R., Victor.
Thomas, H. G., Victor.

WELD COUNTY.

Anderson, Andreas, Ault.
Bellrose, N. W., Eaton.
Call, C. H., Greeley.
Church, W. F., Greeley.
Dyde, C. B., Greeley.
Gormby, T. B., New Windsor.
Graham, R. F., Greeley.
Hughes, J. G., Greeley.
Jones, R. E., Fort Morgan.
Law, G., Greeley.
Marks, A. D., Fort Lupton.
Mead, Ella A., Greeley.
Miller, J. K., Greeley.
Pogue, G. R., Greeley.
Reed, D. W., Greeley.
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